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IS UNEMPLOYMENT INEVITABLE?

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INTRODUCTION

THIS volume, for which the authors of *The Third Winter of Unemployment* are responsible, deals with some of the underlying causes of unemployment. We have not attempted to make the investigation exhaustive. To do so would have involved a very arduous and prolonged inquiry; and we have preferred the method of relying upon authoritative opinion to that of attempting to investigate every point independently. We have therefore secured memoranda from a number of persons expert in their particular spheres, and have supplemented these by a few specific detailed inquiries carried out by some of the members of our Committee on points which seemed obscure. This volume is therefore in the form of a series of essays for which the authors alone are responsible, together with an introductory report which represents our view of the questions which our inquiry covers.

The essays fall into three groups. The first consists of a series of papers by British and foreign economists discussing on the one hand the future prospects of Great Britain in general, and on the other the problem of the trade cycle. This section also contains a paper on the economic effects of the export of capital. These papers approach their topics from the point of view of economic theory.

The second group consists of a series of papers on individual British industries. Clearly, this series could have been indefinitely expanded, but the papers we have printed seemed sufficient to enable us to form a general impression of the future of British industry. The writers were quite definitely invited not to confine themselves to

facts which could be demonstrated, but without prejudice to give their forecast of the balance of forces in future world competition in the various industries.

The third group of essays includes mainly statistical studies which are concerned with the future adult population of Great Britain, the relation between cost of living and wages, and similar points.

Many of the essays, for example that of Prof. Pigou in the first series and that of Mr. Thorneycroft in the second, discuss questions on which there will be differences of opinion. On the more controversial of these issues our attitude is expressed in the introductory report. We cannot expect that our conclusions will meet with universal acceptance. We are conscious that many points have been ignored, many inadequately treated, and many profitable subjects of inquiry left unexplored. But we have not had at our disposal the necessary time or resources to pursue the investigation on an adequate scale. Moreover, the subject, though of vital importance to Great Britain, is a speculative one, involving not merely argument and the compilation of statistics, but also judgment and even the gift of prophecy. We have, however, at least attempted to form an idea of the future trend of British trade, and even if our statement achieves no further result it may serve to emphasise those factors which will determine the future prosperity of our country, and to prepare the ground for more exhaustive and possibly official inquiry.

J. J. ASTOR.

P. J. PYBUS.

A. L. BOWLEY.

B. SEEBOHM ROWNTREE.

ROBERT GRANT.

D. SPRING-RICE.

J. H. JONES.

F. D. STUART.

W. T. LAYTON (*Chairman*).

May 1924.

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PART I
SURVEY AND FORECAST

CHAPTER I

THE SCOPE OF THE PROBLEM

To deal with the subject of unemployment exhaustively would involve an examination of the structure of the economic world, a detailed analysis of many types of employment, an inquiry into foreign trade, the discussion of the causes that affect the psychology and physique of different sections of the community, and many other specific studies. We have not attempted this ambitious programme. The following volume is mainly concerned with the two aspects of the problem which seem the most important and are also perhaps the most difficult to handle. They are certainly the two on which there is the least understanding and knowledge. They are the Trade Cycle on the one hand, and on the other the possibility of finding employment for the steadily increasing industrial population of Great Britain in the changed conditions of the world, without a serious reduction in the average standard of life.

These two aspects do not cover the whole field, and in order that the picture we present may not appear out of focus, some other aspects of unemployment may be briefly enumerated, with an indication of their economic importance.

Normal Unemployment and the Reserve of Industry

In the first place there is *seasonal* unemployment. In the decade before the War the percentage of unemployed in Trade Unions, which was the only index then available,

varied between an average of $5\frac{1}{2}$ per cent in December down to $4\frac{1}{2}$ per cent in May, a difference of 1 per cent of the total numbers included. This figure, however, does not represent the full extent of seasonal unemployment, which exists all the year round. The building trade, which is perhaps the most seasonal of the great industries, is of course at its best in the summer ; but in other industries the seasons of greatest employment occur at different periods. " Indeed there is, as the Board of Trade is able positively to testify, no month in the year in which some great industry is not at its very slackest, and equally no month in the year in which some great industry is not at its very busiest. Thus, taking the actual facts of the last ten years, whilst January is the slackest month in iron-mining and the furnishing trades, it is actually the busiest at the docks of London and other ports (except those dealing with the Baltic), and one of the busiest for coal-mining ; in February the plumbers have most unemployment, but the paper-making trade is at its briskest ; in March and April the coopers are at their slackest, but the steel-smelter, and the great industries of the textiles and multifarious furnishing trades are busy." ¹ The catalogue might be continued right round the calendar. To some extent this seasonal swing in each industry may be met by short time in slack seasons and overtime in busy ones. To some extent, also, it may be dealt with by workpeople moving from one trade to another. But this cannot be true of specialists, and in the main each industry must have associated with it a sufficient number of workpeople to carry it through the busy season. Hence all the year round there will be some industries which for seasonal reasons will have some of their workpeople wholly or partly unemployed, unless some means of dovetailing employment or spreading work more evenly during the year is devised.

Secondly, unemployment may be due to changes in

¹ *Seasonal Trades*, by various writers, with an introduction by Sidney Webb. Edited by Sidney Webb, LL.B., and Arnold Freeman, M.A. London : Constable & Co., Ltd.

fashion, or to changes in methods of industry or of the class of goods consumed. Thus, the introduction of the motor, the use of electric light, or indeed any other material development of modern days, involves for many a change in occupation, and while it is occurring there is considerable unemployment. Even where the demand upon industry itself is not fundamentally altered, a change in technique or in the quality of goods may mean unemployment of particular individuals. The substitution of steel for wrought iron, for example, involved, during the last two decades of the nineteenth century, a steady reduction in the number of puddlers—a class of men with high skill, which could not be used to advantage in any other direction.

In the third place, a similar displacement accompanies the transfer of industry from one place to another. Sometimes the transfer is temporary, and sometimes permanent ; but the fact that workpeople with homes cannot be moved about freely, especially with the present shortage of houses, accounts for a certain degree of unemployment. Thus, for some time past Barrow has been suffering the acutest depression ; but only by very slow degrees could the working population be moved from this centre.

A fourth class of workers are unemployed because they have lost their industrial capacity. The age at which a man ceases to be worth employing varies from industry to industry, but there are very many trades in which it is arrived at many years before a man qualifies for the Old Age Pension. At the present moment the mines are extremely short of labour, but the unemployment insurance figures of the Ministry of Labour show that 2·6 per cent of miners are out of work. We made inquiries into this case, and found that in all those labour exchange areas where there are substantial numbers of miners out of work, either the cause is a special local one—for example, pits that have not been pumped clear of water since the mining dispute of 1921—or the men come within the category of those who will never find employment in that industry again. In the particular areas investigated we found that

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from two-thirds to three-quarters of those on the books came within this definition.¹

Finally, there is the fact that, broadly speaking, the industrial team of the country, not only in general, but also in particular trades, is numerous enough to carry on all old-established industries when times are good, and that when conditions are only moderate or bad there is a varying amount of unemployment which, in the decade

¹ STRESS OF UNEMPLOYMENT BY AGE

Age.	Estimated Age Distribution of Males claiming Insurance Unemployment Benefit Jan. 27, 1923.	Estimate of Age Dis- tribution of Insurable Male Population.	Percentage Unemployed Jan. 27, 1923.
		ooo's.	
16-17	21,550	455	4·8
18-19	70,950	461	15·4
20-24	195,350	973	20·1
25-29	142,850	935	15·3
30-34	113,000	895	12·7
35-39	98,200	845	11·6
40-44	95,150	812	11·7
45-49	95,200	700	13·6
50-54	89,250	585	15·3
55-59	75,250	422	17·8
60-64	58,650	325	18·0
65-69	37,800	159	23·8
70 and over	6,650	135	5·4
	1,099,850	7,700	14·2

The age distribution of unemployed in insured trades is based on a sample examination of about 2 out of 7 claims of which the results are given in the *Ministry of Labour Gazette*, November 1923.

The age distribution of the insured, whose total is known to have been about 7·7 million, is computed from the occupation figures of the Census of England and Wales, 1911, combined with the age distribution in 1921.

The figures are all approximate, but probably sufficiently accurate for a rough estimate.

The excess at ages under 25 is in a large measure due to unemployment of ex-service men.

If from the ages 35 to 70 unemployment had been at the minimum 11·6 per cent, there would have been 103,000 less unemployed.

If now unemployment is reduced throughout by two-thirds to bring it to a normal year, the excess in ages 35 to 70 would be about 34,000.

A number comparable with 30,000 may perhaps be taken as the permanent contribution of age to unemployment.

before the War, caused the annual averages of unemployment to swing between, say, $2\frac{1}{2}$ per cent and $7\frac{1}{2}$ per cent. The causes we have already mentioned are sufficient to explain the minimum of $2\frac{1}{2}$ per cent. The need of a reserve of labour to enable the country to expand its trade in good times means that even when conditions are normal this reserve will account for a further $2\frac{1}{2}$ per cent of unemployed.

Each of the first four of these aspects of the unemployment problem requires a special study, and remedies need to be found in the way of securing supplementary work in seasonal trades or for those who get old. But this is not our present objective. We only wish to record here that as far as we can judge, unemployment in Great Britain, in years which were neither specially good nor bad, amounted before the War to nearly 5 per cent of the work-people in industry. These figures contain some of the more fluctuating trades, and the figure would not improbably be less if we looked at the country as a whole. But we are of opinion that the minimum number of unemployed in insured trades will not, save in years of specially good trade, fall below 400,000 or 500,000 men and women, unless ways are found of modifying the causes to which we have referred. This floating surplus—partly the reserve and partly the wastage of industry—can probably never be entirely dispensable; but it should be easily possible for those, at all events, who form the *bona fide* reserve to be properly taken care of and maintained at the charge of industry.

These facts and figures help us to see the scope of the remainder of the problem. The Ministry of Labour figures of unemployed in insured trades reached a maximum of 2,170,000 in June (coal strike) 1921, and, after a partial recovery, a second maximum of 1,930,000 in December of that year. In April 1924 they were about 1,100,000.¹ The surplus, on the above rough estimate, which may be regarded as constituting the abnormal element in the present problem, has thus fallen from 1,400,000-1,500,000 to 600,000-700,000 at the present time. In other words,

¹ Including a proportion of part-timers.

more than half the task has been accomplished. To ascertain whether that rate of absorption can be maintained is one of the chief purposes of this study.

The Future "Occupied" Population of Great Britain

In defining our problem we referred to the need of finding employment for an increasing population. But the increase with which we are concerned is in the numbers, not of the total population, but in those of industrial age, say from 15 to 65. This total is increasing, because the intake of young people who reach the age of 15 is so much larger than the numbers attaining 65 years of age or dying in between these ages.

Owing to the fall in the death-rate the number of persons surviving in the higher ages of employment has steadily increased, while the fall of the birth-rate is too recent to affect the number of young people coming into employment.

There has been much misunderstanding on this issue ; but the information now available renders it possible to make something of a forecast. A memorandum by Dr. Bowley, which is printed as an annex to this report, shows that *if emigration continues as in the decade preceding the 1911 census*, the population between 15 and 65 would show the following changes in the next 20 years :

POPULATION BETWEEN 15 AND 65 IN GREAT BRITAIN

	Males.	Females. Total.	Females in or seeking Employment.
1921	13,307,000	14,936,000	5,690,000
1931	13,960,000	15,821,000	5,870,000
1941	13,898,000	15,701,000	5,800,000
<i>Annual Increase.</i>			
1921-31	+65,000	+88,000	+18,000
1931-41	- 6,000	-12,000	- 7,000

If the figures in the last column are analysed by ages, it will be found that the whole of the increase in the present decade is in respect of women over 25. All the figures in this table assume a normal rate of emigration. The easing of the difficulty, however, afforded by emigration virtually ceased during the War and has not yet reached the dimensions of the former decade. *If there were no emigration*, Dr. Bowley's estimate shows that there would be an annual increase of 140,000 males and 40,000 females to be employed up to 1931, and 47,000 males annually in the following decade. *If emigration were at the low rate of 1921 and 1922*, the annual increase to be employed in the present decade would be about half-way between these two figures, viz. 90,000 males and 30,000 females.

These figures point to certain conclusions, which may be reassuring to those holding alarmist views of the difficulty of finding employment for the increasing population. They are :

1. The problem of the increasing working population is one of the next few years only.

2. Normal emigration would reduce this problem to comparatively small dimensions.

3. If emigration became normal, the immediate problem could be entirely removed by raising the school age to 16, which would withdraw from the labour market some 700,000 lads.

Thus, while the increasing working population is an important element in the situation, an analysis of the figures shows that it is not in any case so serious as is sometimes supposed, and may in fact presently be found to be non-existent. If no change occurs in the birth-rate, the problem fifteen years hence may be an insufficiency of labour.

CHAPTER II

THE TRADE CYCLE—RECENT EXPERIENCE

THE whole world is so familiar with the phenomena of the ebb and flow of trade that there is no need to give formal evidence of them. Before, however, examining their causes or discussing possible ways of modifying them, there are one or two preliminary observations to be made.

(1) In the first place, in the fifty years before the War two tendencies can be traced in movements of trade. First, they seemed to be growing more world-wide and simultaneous in all countries as a result of the closer intercommunication between nations. The boom of 1873-4 was common to all the industrial nations of Europe ; 1900 was a year of general prosperity, as was also the first part of 1907, in which year a monetary collapse in the United States in the autumn spread rapidly throughout the countries of the world. A second tendency that can be traced is that the period of the ebb and flow of trade was apparently growing shorter. Down to 1866 there seemed to be a well-marked ten-year rhythm. Since that date the years of maximum trade activity have been 1873, 1882, 1890, 1900, 1907, and 1913. Without anticipating the discussion of the causes of the cycle, we may say that its shortening duration suggests that these movements are affected by psychological influences which can be speeded up by quicker and more general intercommunication, and not merely by physical causes.

Since the War economic conditions have been influenced by very special factors. Some of these have been confined to particular countries or groups of countries, while a

number of barriers—both political and economic—have prevented the free flow of commerce and business between nations that existed in pre-War days. It is not therefore surprising to find that in the five years since the War trade in various countries has followed a rather more independent course than was formerly the case. Thus, Japan began to feel the effect of trade depression in 1919, when trade in Great Britain was in full swing. In 1921 Germany was expanding her industries rapidly, while Great Britain was in the throes of the depression—partly indeed as a result of the disturbing effect upon prices of the revival of German production. Again, in 1923 economic conditions in the United States showed a very striking recovery, and indeed she attained in the spring a condition of record trade activity. We may, however, reasonably regard these apparently independent movements as a passing phase, and we anticipate that in future the tendency referred to above will again emerge, and that the trade cycle will tend to shorten and to be world-wide in its operation.

(2) A second consideration is that countries which live by exchange, and in particular industrial countries, are likely to be more sensitive to such world-wide movements than more self-contained communities, mainly dependent upon their own agriculture. Great Britain, the country which lives by exchange more than any other, is therefore very much influenced by trade winds from every quarter of the globe. Whatever may be the case with other countries, it will not be possible for us to treat the trade ebb and flow as a merely domestic matter. At the same time, this dependence upon foreign trade does not by any means imply that Great Britain is bound to suffer more violent fluctuations than a more self-contained nation. On the contrary, a country which has a very small foreign trade is liable to suffer most acutely from a local disturbance, such as a harvest failure. In India, for example, or Australia, the damage done by a bad season may be very severe indeed, though the fact may show itself in greatly reduced material well-being for everybody rather than in complete loss of work for a number of workpeople. For a country in the

position of Great Britain a large and widespread foreign trade is in a very real sense an insurance against excessive trade fluctuations. The world's commerce as a whole undoubtedly varies less than the commerce of any particular country, and a nation with world-wide connections can "bring in the new world to redress the balance of the old," or *vice versa*. An economic policy which tended to confine British trade to particular channels would be likely to intensify the violence of trade movements. On the other hand, the restoration of the trade activity of Russia, the development of backward countries such as China, and the growth of the commerce of South America and other distant lands are on the whole likely to diminish the variations in the world's total trade, and therefore of British trade. A simple but striking example of the way in which a world-wide trade only suffers in a modified degree from the influence of particular disturbing factors is afforded by Great Britain's wheat supplies. In the ten years before the War our imports of wheat and wheat flour varied between 109 million cwts. and 124 million cwts., the largest actual variation between any one year and the next being the increase from 112 million cwts. in 1911 to 124 million cwts. in 1912—a variation of 11 per cent. But during that decade supplies from individual countries showed the widest variation; thus we imported from Russia 5 million cwts. in 1908, 29 million cwts. in 1910, and 5 million cwts. again in 1913. Even the United States, which has usually been a steady source of supply, dropped from 47 million cwts. in 1903 to 37 million cwts. in 1906, 18 million cwts. in 1910, and rose to 43 millions in 1913. Canada's contribution varied in the decade from 8 million cwts. to nearly 28 million cwts., while Australia sent quantities which varied between nothing and $14\frac{1}{2}$ million cwts. British India's contribution varied from $25\frac{1}{2}$ million cwts. in 1904 to 3 millions in 1908: when she sent us the former quantity her contribution was larger than that of any country in the world. In the ten years since that date her contributions have been, in million cwts., 23, $22\frac{1}{2}$, 18, 3, $14\frac{1}{2}$, 18, 20, $25\frac{1}{2}$, 19, 11. What is true of wheat production is true of other branches of

industry. The world-wide extension of trade means, in fact, that the variations in local disturbing forces which previously would have made a very considerable wave on the surface of commercial life cancel one another out.

(3) The fact that in the last few years we have had the most violent fluctuation of trade in modern history does not tend to refute this general conclusion. The boom, with the succeeding slump of 1920, was a War movement, which presumably will not occur again unless a disturbing influence comparable to that of the World War should make its appearance. But though this movement was not a purely economic one, its phases resemble on a very large scale those which occur in more normal trade cycles. It is therefore worth while to narrate its history in some detail; for this will enable us to trace the inter-relation of financial and industrial movements as it were through a magnifying glass.

The Boom of 1919-1920

(a) PRIOR TO APRIL 1920.

The outstanding feature of the boom of 1920, as compared with other periods of great activity, is that it was not in any sense a boom of production, but was a boom of prices only. It is true that in 1920 unemployment among Trade Unionists had practically disappeared, and that work and wages were abundant. But the workers were working shorter hours and producing less per hour than previously. Demobilisation was slow, and certain kinds of labour scarce, while the processes of production were constantly being checked by delays at port, the hold-up on the railways, the erratic supply of raw material, and a series of labour disputes. The iron-founders' strike in particular was a cause of reduced production in the whole metallurgical group of trades throughout the six months at the height of the boom. Moreover, machinery had not been fully adapted to peace work, and the change over in the factories was still a cause of interruption. For these various reasons the volume of production in the last half

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of 1919 and the first half of 1920 was considerably less than the pre-War output of Great Britain, and less than the output in 1923—a year of unemployment. The following figures (in millions) illustrate this :

	1913.	1919.	1920.	1923.
	Millions.	Millions.	Millions.	Millions.
Coal production (tons) .	287	219 *	229	278
Export of cotton goods (square yds.) . . .	6847	3410	4437	4141
Ships launched (tonnage)	1·94	1·93	2·14	·68
Steel production (tons) .	7·7	7·9	9·1	8·5
Export trade, recalculated on 1913 prices (£) .	525·2	288·1	372·5	404·4
Tonnage of shipping entered and cleared in British ports (shipping tons)	116·9	64·8	73·1	116·8
General merchandise carried on British railways (tons) . . .	67·8	68·3†	68·7	62·8

* Calculated from figures for the last seven months of the year.

† Includes 6½ millions of Government traffic.

The explanation of the boom is to be found in the re-awakening of the world's demand for various kinds of goods which had been denied to it during the War, at a moment when the apparatus of production was not yet ready to expand. This demand was to a large extent, though not entirely, concentrated upon Great Britain; and the inability to get deliveries meant, as it always means in a scarce market, that the orders were duplicated, and that when once the price rise set in, merchants and speculators desiring to profit by the upward movement entered the market and made matters much worse. The movement, though originating in a foreign trade demand, rapidly affected every branch of economic life. Thus, there was a temporary demand from foreign countries for ships, which could probably have been met by the normal production of the yards in twelve months, and in any case was a temporary thing, because the release of those on war service was soon to yield a plethora of ships. But

the desire to get ships quickly led both to the duplicating of orders by real buyers, and to the speculative placing of orders by middlemen. Obviously, the supply of steel plates would not meet so expanded a demand, and the shipyard owners, fearing a world shortage of plates, began frantically to buy up steel works, or to book their supply of plates for two or three years ahead—in some cases even booking the future output of still unfinished works! Steel rails, which were quoted at about £7 per ton before the War, emerged from Government control in April 1919 at £13 : 10s. per ton. From this figure they rose steadily to £25 per ton in August 1920, and were £25 : 10s. per ton on January 1, 1921, but at these latter dates it was common experience that delivery could only be obtained by paying a premium over and above the Association prices. By the end of January prices had fallen to £21, and by the end of February to £18. A year later they were £9 : 10s. In a few cases, notably that of pig-iron, an attempt was made to restrain the wildness of the upward price movement. In the pig-iron industry, which had perhaps more experience of price fluctuations than any other trade, wages are determined in accordance with a sliding scale based upon prices, and both employers and workers were aware of the economic rule that reaction tends to be equal and similar to action. But such efforts at restraint only showed that the situation was beyond the control of any one section, and violent price movements, such as that described, took place in most industries, particularly in all branches of the metal trade and the textile trades. The fairy vision of future profits thus disclosed was an opportunity for the speculative financier, and the result was an orgy of company promoting and the flotation of new issues, to which the soldiers' and officers' gratuities made a handsome contribution. The wave of trade confidence and of speculation appears to have started in Japan and spread to America, and subsequently to Great Britain, France, and Belgium.

On the whole, national finance seems to have played a very small part in all this. During the financial year of

1919-20 the Government was far from paying its way, the deficit on the year being nearly £330,000,000, which was met partly by an increase in Treasury Bills, but mainly by the funds provided by the flotation of Victory Bonds and Funding Loan. The Ways and Means advances from the Bank of England were actually reduced. As the boom gathered momentum, anxiety was felt in the city as to what would happen, but no positive steps were taken to check it. It is true that informal conferences were held in the spring of 1920, at which the Government urged the banks to check the expansion of credit by definitely rationing their customers. But though from November 1919, when the bank rate had risen to 6 per cent, the demand had been so great that the banks, for the sake of prudence, had to exercise restraint, no concerted action seems to have been taken; nor did the Bank of England think it right to take the initiative. A note of warning had, however, been struck by the issue in December 1919 of a Treasury minute to the effect that the policy of the Government was to allow no further increase in the currency note issue; but that on the contrary, the fiduciary issue would be restricted by making the highest total actually issued in any one year the legal maximum issue of the next. In other words, the legal tender in the country would be slowly contracted unless it were replaced by gold. The turn of the tide dates from the further rise of bank rate which occurred in the third week of April 1920, which was preceded the day before by an announcement of a drastic increase in the price of Treasury Bills on behalf of the Treasury. In some quarters this fact has been represented as a deliberate attempt by the Treasury to force the Bank of England to raise its rate. But it may perhaps more correctly be regarded as the bursting of the dam of the rising reservoir at its weakest point. The demand for credit money was becoming so keen that during the preceding weeks the public had shown a continued unwillingness to renew Treasury Bills. The Government had come to the time of the year when the flood of income-tax receipts had ceased. In the existing state

of the capital market, when ridiculous terms were being offered in new issues of all kinds, the Government could not contemplate permanent borrowing, and it had therefore to make a bold bid for its share of the floating credit of the market. Contemporaneously with this raising of the price of Treasury Bills the bank put up its rate, which meant an additional charge upon all industrial borrowers and served as a red light.

Before passing on it is worth while to note in parenthesis that throughout this period businesses of all kinds were in very heavy arrears to the Government in respect of Excess Profits Duty, and we have it on high authority that the industrial world to a very large extent actually financed itself out of the balances, sometimes accumulated over two or three years, which were owed to the Government. This had a bearing on the subsequent credit position. Still, on a general view of the boom it cannot, we think, be held that the Government by unsound credit policy, or anything that might be called deliberate inflation, was a prime cause of the movement. The Government, it is true, by the disbursement of large sums in gratuities and by not withdrawing in taxation more rapidly the funds available in the hands of business, undoubtedly tended to enlarge the amount of money in circulation. The main way, however, in which the Government can borrow and produce an inflationary effect is by Ways and Means Advances; and though these remained at a very high figure throughout the boom they were actually diminished as it proceeded. In the early stages of 1919, the Government actually succeeded in floating long-dated loans, and at the end of the boom it was collecting more than it was spending (the Exchequer receipts for the first quarter of 1920 were £643,000,000—including £205,000,000 Special Receipts—while the expenditure was £440,000,000). The Bank of England, for its part, increased its note circulation against an equivalent increase in coin and bullion; but throughout 1919 and the beginning of 1920 its returns also showed a large increase in Other Deposits (which item includes the reserves of the Joint Stock Banks), and with a fall in the reserve of the

Banking Department, the ratio of its reserve to liabilities showed a steady reduction throughout the boom. Indeed the fall in the Bank of England reserve may be regarded as having been no less potent than the Treasury's necessities in producing a rise in bank rate. The mass of the demand for bank money, however, naturally fell upon the Joint Stock Banks, and it is of interest that the deposits with these rose in 1919 from £1,583,000,000 on January 1 to £1,762,000,000 on July 1, and to £1,874,000,000 at the end of the year. These figures, however, are not nearly large enough to account for the increased money value of business done during the year, and it is evident that there must have been a great increase in the velocity of turn-over of bank money. Thus, in the months following the dates for which the deposits of the Joint Stock Banks have just been quoted, the clearings of the Bankers' Clearing House showed a much more than proportionate increase, the statistics giving a daily average of £80,000,000 in January 1919, £104,000,000 in July 1919, £128,000,000 in January 1920, and finally a high-water mark of £136,000,000 in March 1920. The returns of the banks show that throughout they were able to keep a steady percentage of cash in hand or at the Bank of England. Further, the fact that there was such an enormous volume of Treasury Bills outstanding, and that a large amount was held by the banks, meant that by allowing these to run off the latter had an easy and immediate means of restoring their balances at the Bank of England. But if they refused to renew, the Government was in the position of having either to compete for the market supplies of capital, or to take measures which would cause inflation.

In short, the position may be put as follows. At the end of the War the circulation of money was, on the whole, rather sluggish, while the Floating Debt had increased, partly by Ways and Means Advances—a form of credit from the Bank of England which increases the reserves of the Joint Stock Banks and permits a very large superstructure of credit to be built upon it. When the speculative boom came, this possible margin of inflation, which had

not yet been used, was to some extent drawn upon, and enabled the banks to increase deposits. But the boom was principally financed by a very rapid increase in the turnover of money. A point came, however, when the existing means of inflation proved inadequate to maintain the boom, the technical position being that the banks were in a position to compel the Treasury either to go to the Bank of England for further Ways and Means Advances, and so bring about further inflation, or to drive up the price of credit by competing for it in the market. The Treasury preferred the alternative of making credit scarce and raised its rate for Treasury Bills.

It may be doubted whether since the War there has ever been in this country any more definite act of deflation than the decision to refuse any further inflationist measures when the dimensions of the boom called so loudly for an extension of credit in April 1920. Certainly, there was no immediate collapse such as has occurred in moments of crisis in the past.

(b) AFTER APRIL 1920.

The rise in bank rate coincided with a check to the rise in prices. The cause of the check was the discovery that the world's buying resources were limited. Efforts made in 1919 to dispose of raw materials on the Continent of Europe by the countries with accumulated stocks or by the producing countries met with very little success, while the credit position of both Governments and individuals in many parts of the world, from China to South America, proved to be as uncertain as that of the ex-belligerents. As soon as it was realised that the normal course of trade was not going to be resumed, a doubt was raised as to the price level, and this had the effect of keeping buyers out of the market. It was at this moment the bank rate rose, and it had an immediate psychological effect, though it was some time before the extent of the liquidation which would have to be made was appreciated. Business firms were fully supplied with material, or, at all events, had placed orders for material and plant at top prices.

They had very often recapitalised themselves, and wages were on an excessive level. The set-back had already spread from Japan to the United States ; but the reaction only occurred slowly in this country, and, moreover, it occurred at different times in different trades. Thus, in the *Commercial History of the Economist* for 1920 there is no record of any immediate effect upon employment of the change in the direction of prices and of credit. This started some months later. " In August a decline in employment beginning in boot and shoe manufactures, leather tanning and currying, cotton-weaving, and the hosiery and jute trades, spread gradually to other industries. In October the wave of short time and unemployment was caused by the general coal strike (which lasted ten days at the end of October and the beginning of November), and although after the strike was settled there was a partial recovery, it was not sustained, and in December employment was poor in most of the principal industries." The case of the iron and steel trade is of special interest, because it illustrates what has already been said, namely, that the boom was one of prices and not of production. The demand for iron and steel in 1920 continued good with the works well booked ahead, but by the summer of 1920 the blast furnaces and steel works of France began to get a supply of fuel, while those of Belgium and Lorraine which had been wrecked by the Germans were at last being put into working order, and becoming able to produce. In the late autumn of 1920, rumours of price quotations which French and Belgian works were able to make made British quotations, based upon a most fantastic price for coal, look ridiculous, and in December 1920 and January 1921 the bottom dropped right out of the iron and steel market of Great Britain. In three months, the output fell to less than half of its previous level, before the coal dispute intervened and closed it up altogether. Its history is of such special interest in this connection that we quote the figures month by month in thousands of tons :

	1919.		1920.		1921.	
	Iron.	Steel.	Iron.	Steel.	Iron.	Steel.
Jan.	661	718	665	754	642	493
Feb.	626	734	645	798	463	483
Mar.	691	758	699	840	386	359
April	647	668	671	794	60†	70†
May	671	755	739	846	13	6
June	658	631	726	845	1	3
July	641	618	750	790	...	...
Aug.	521	474	752	709	...	...
Sept.	581	718	741	885	...	...
Oct.	445*	433*	(533†)	544†)	...	...
Nov.	624	695	(403	505)	...	...
Dec.	632	692	682	747	...	...

* Railway Strike.

† Coal Strike.

The course of employment and production on the downward slope of the boom of 1920 is complicated by the dispute in the coal mines, which led to their being closed throughout April, May, and June of 1921. This caused a quite unexampled condition of unemployment, the Trade Union percentage exceeding 23 per cent in June of that year. The frontispiece diagram, however, shows that it is possible to trace a rough theoretical curve eliminating this fact, and showing a fairly straight increase from 6 per cent in December 1920 to 16 per cent in December 1921. There is some difference of view as to the date at which the liquidation may be said to have come to an end, and most industrialists think of the turn of the tide as having occurred in the late summer of 1922. But the chart seems to indicate that the worst of the difficulty was over by March 1922.

This enormous reduction of employment was accompanied by reduced production, by falling prices, both wholesale (March 1920) and retail (November 1920), the latter after a lag of about six months, and by falling wages (March 1921). One of the questions at issue is whether it was necessary for the movement to go on so long, and if so to what extent its actual course was influenced by monetary

policy. On these important and vital matters the tables attached to this section of the report seem to show certain features of which one, at all events, is of outstanding significance, namely, that during this period there was no fall in the volume of bank deposits, and that therefore, if there had been business to be done, there was ample bank money available for doing it. The rate of turn-over of business, however, slowed down, and bank clearings—in particular country clearings, which reflect industry rather than finance—fell from the very high figure of 1920. It is true that bank rate remained high until after the beginning of 1921, but from the account already given it cannot be said that the price charged for bank advances was the most vital consideration in checking industry. There were, however, certain difficulties with which industry was faced that had a bearing on the situation. An important point was the decision of the Government in the spring of 1920 to continue E.P.D. for a further year. This put a damper on some of the high hopes of profit which had been founded on the assumption that E.P.D. would be removed. Further, the actual collection of E.P.D. already due began to draw upon the funds which industry was using as floating money. Moreover, the moment trade was checked and buying ceased, firms were faced with the need of financing their current business over a considerable period, and there was a demand for advances from the banks. This is reflected in a big increase in the last half of 1920 in the advances of the Joint Stock Banks, but the latter endeavoured to protect themselves as much as possible by urging their customers to fund their indebtedness; and a considerable number of industrial debentures were floated during the twelve months succeeding the peak of the boom, in order to relieve the banks from the necessity of financing big industrial concerns. The figures of new issues for British industry given in the Appendix show a considerable though reduced volume of new issues amounting to £150 millions during the first year of the slump. Many industrialists claim that this process of funding indebtedness was one of the chief hindrances to

the recovery of trade, and argue that it could partly have been avoided if a deliberate and courageous policy of very cheap money had been introduced as soon as ever it was clear that the boom had been checked. It is, however, an adequate answer to this objection that at the time nobody was quite certain if the boom had actually been checked, and even at the end of 1920 there were those who thought it would revive with renewed vigour if only certain difficulties were cleared out of the way. The situation, at all events, was sufficiently doubtful to make a really cheap money policy rather speculative prior to 1921.

(c) TWO YEARS OF STABILISATION.

The features of the last two years can be very briefly described. 1923 has been a year of great activity in the United States, and in the two years taken together there has been a much slower, but nevertheless definite, recovery in Canada, Australia, and South America. At the end of 1923 there was a slight sign of revival in India and South Africa. Against these has to be set the effect of the Ruhr Occupation in unsettling conditions in Central Europe. This effect, however, was not wholly unfavourable to this country, but, on the contrary, gave to certain trades, notably the coal and iron and steel industries, a temporary stimulus in providing for the most urgent requirements of France and Germany. The net result has been an increase in production as shown by the statistics of coal and iron and steel output, by the tonnage of goods hauled on British railways, and by the statistics of the "volume" of our export trade—measured by recalculating it at 1913 prices—which showed a marked recovery. The increase in volume of production began to be most marked in the autumn of 1922. 1923 divides itself in this respect into three periods. In the first four months the improvement continued at a rapid rate, in the second four months there was a sharp check, and in the late summer the upward movement began once more. It appears to have been checked yet again at about the time of the General Election, and is still not proceeding as fast as in the spring of 1923.

It is difficult to measure production in general terms, but it is probable that the rate of national production to-day is not less than that of 1913 in some industries at any rate, and production as a whole is substantially greater than in 1920.

This recovery mainly took place during a period in which prices were practically stationary, but in the last few months an appreciable upward movement has occurred, small in comparison with the movement of 1920, but large compared with those of pre-War times.

This increase in volume of trade under conditions of stationary and ultimately of rising prices has been achieved with remarkably little disturbance of monetary machinery. Bank deposits in 1922 continued to dwindle slightly, but in 1923 made an equally modest recovery in England and Wales. The statistics of Bankers' Clearings show practically no sign of the movement, but this is chiefly due to the fact that in the early part of the two years we are discussing there was great Stock Exchange activity, and therefore of money turn-over, which has definitely diminished subsequently, while the volume of trade has been increasing, involving a money turn-over of a different kind. It has also to be remembered that though wholesale and to a large extent retail prices have been steady during these two years, wages and the price of many manufactured goods do not appear to have touched bottom until 1923. A given turn-over of money as shown by the Bankers' Clearing House has thus not been incompatible with an increase in the volume of trade.

The period has been one during which taxation, though still far above pre-War levels, has been somewhat reduced. The Government has no longer great war stores at its disposal, but, on the other hand, it is rapidly getting rid of war commitments. Other war charges, such as pensions, are already beginning to fall ; as prices have come down Government expenditure has automatically dropped, while the campaign for economy has reduced the scale of Government establishments. Hence the budgets of these two years have shown reductions both of direct and indirect taxation. But profits have recovered, and with an increas-

ing volume of trade revenue has come in surprisingly well, and permitted the Government to redeem £200 millions sterling of debt during these two years. This reduction has chiefly affected Treasury Bills, which have fallen from £1058 millions to £650 millions, the balance of the reduction not due to repayment being caused by the substitution of Treasury Bonds and other forms of borrowing for Treasury Bills. This has not, however, affected the credit position. The reserves of the banks with the Bank of England have been maintained, and they have been able to replace the Treasury Bills with Trade Bills and to finance an increasing volume of business by adding substantially to their advances. The resources of the market have in fact been sufficient to cope with the trade recovery up to the present without friction or difficulty of any kind, and, so far as can be seen, without artificially influencing the level of prices.

CHAPTER III

THE TRADE CYCLE—ANALYSIS AND CAUSES

THE foregoing considerations show the importance of understanding what happens when there are big movements of trade, if we are to discover a policy which will reduce their violence and mitigate their effects. We will now briefly analyse this baffling phenomenon in general terms, and apart from the special circumstances which have marked the movement of the last few years.

In a world where the individual producer sees only his own little corner of the economic field, and is far removed in space, and often also in time, from his market, nothing but direct intervention of Providence would suffice to make production adjust itself perfectly and instantaneously to the world's needs, and thus substitute a straight line for the curve of economic life. Taking it for granted that the world is not run by an omniscient as well as an omnipotent economic dictator, there will be fluctuations in production and trade. What we have to explain is why these are not mere ripples but grow into huge wave-like movements over a series of years.

There is no simple answer to this conundrum, and, as we shall see later, a very large variety of explanations have been given. It is not our task to give a dogmatic judgment where experts differ so considerably. Moreover, the truth probably is that the real explanation involves many of the causes assigned, and that these are of varying importance at different times. We venture, however, to suggest a provisional answer to the question as here postulated. The metaphor of waves upon the sea is an inadequate one to

describe the economic world, for two reasons. In the first place, the ups and downs to which we referred a moment ago do not take place within an area whose extent is unvarying. The economic world has never been quite stationary, and for the past two centuries, in the western world at all events, it has experienced not merely oscillations but rapid and tremendous growth. Secondly, individual movements in production or in prices are not isolated, but in the modern complex world tend to spread to others and become cumulative in their effects. Thus an increase in iron and steel production in any country, in response to what is believed to be growing demand, involves increased rail transport, activity in the trades producing material, busier retail trade in the iron and steel towns, and so through an ever-widening circle. The omnipotent dictator of the world's economic life would therefore have to provide in a modern community not merely for perfect equilibrium in production, foreign trade, and consumption under stationary conditions, but for perfect balance between an infinite variety of products assembled from all parts of the world, all of which are being produced and consumed in growing volume. The increased production which occurs on the up-grade of any trade boom is thus partly real growth, and partly production running ahead of consumption, owing to the fact that there are competing producers not merely in any one country but in many countries. The more complex the world becomes the more easy it is for the discrepancy between production and demand to continue for some time before it is checked, or at all events before it becomes so apparent as to produce a fall of prices and to damp down production again. The machinery of credit, by means of which production and merchandising and commerce generally are financed, is of the greatest importance in this connection, for the fact that it is easy to secure control of purchasing power obviously tends to encourage the placing of orders, and enables stocks to be carried and goods to be moved about the world. But briefly, it may be said that when increase in demand calls for and starts increased production, the period of the trade cycle will be determined by the ease with which production

can be expanded, which in turn depends not only upon credit, but upon the availability of labour, the rate at which material can be secured, the extent to which the trade apparatus of the world can absorb and work upon larger stocks, and the date at which it becomes apparent that supplies are too great to be absorbed by the consumer. The conditions of competition and production, the sensitiveness and accuracy of world markets in judging demand, and the conditions of credit, are perhaps the main factors in determining how soon the world's unbalanced production may be controlled and the period of adjustment commenced.

These points have been stated in general terms. They will perhaps be made clearer by describing in detail the stages of a normal trade cycle.

Analysis

It should be observed that no two cycles are identical ; each in turn possesses its own peculiar features. Some are remembered for the financial panics by which they were characterised ; for example, the effects of the Baring crisis of 1890 reverberated throughout the industrial world. Others have been materially influenced by exceptionally good or exceptionally bad harvests. In public discussions those events within each cycle which delay or strengthen the boom or, it may be, accelerate or intensify the depression, have frequently been regarded as the prime, if not the only causes in operation.

A trade cycle is influenced not only by events which originate outside the sphere of industry but also by the accumulated results of economic development in the past. Each cycle in turn produces permanent effects upon the structure and organisation of industry, and these inevitably affect the manner in which trade adjusts itself to meet the requirements of society. It is noteworthy, for example, that the trust movement which is so marked in many industries here and abroad has been defended on the ground that trusts tend to mitigate trade depression and to stabilise prices over a long period of years. Moreover, the history

of the past fifty years affords strong presumptive evidence in support of the statement that the trade cycle is materially affected by the secular trend of prices, which, in turn, is determined by currency conditions. The trade booms were less pronounced and the depressions more intense and prolonged between the years 1873 and 1896 than in the decades before and after that period, during which the downward trend in prices was explained by the growing scarcity of currency relatively to the needs of the world.

The factors which have been enumerated prevent any trade cycle from repeating in every detail the cycle which it follows. But their resemblances are more striking and fundamentally more important than their differences. It may therefore be desirable to summarise briefly the stages through which trade passes before it returns to the same point as before. In an unending movement it is necessary to start at some more or less arbitrary point, and to assume those features which will only be explained in the concluding paragraph of the description. As we now appear to be passing through the earliest stages of a trade revival, that stage of the cycle serves as a convenient starting-point.

First, it may be said that a number of conditions favourable to revival have made their appearance. Firms have cut themselves loose from the financial entanglements of the initial stages of depression; bad debts have been written off and inflated capital written down. The wastes and extravagances of the time when profits flowed easily have been eliminated and overhead charges thereby reduced. The less efficient firms, frequently using obsolete methods, have been swept aside. The "ins and outs" among the workers—those on the margin of employment and, through physical or mental causes or by reason of old age, of less than normal efficiency—have been dismissed. Wage rates have fallen as low as they are expected to fall, and in many cases the workers, actuated by fear of unemployment, work with greater intensity than at other times. The prices of raw materials have fallen, in most cases more heavily than the prices of the finished products. Floating capital is plentiful, as many avenues for its employment

have been temporarily closed ; bank reserves are therefore high, and bank charges for temporary loans are correspondingly low. Thus the internal conditions of the firms and industries are favourable to expansion ; running costs and overhead charges are extremely low, and price quotations are reduced sufficiently to encourage hesitating customers.

Further, the demand for the produce of industry grows in volume. The stocks which had accumulated at different points between the retail shop and the factory and clogged the wheels of trade in the earlier stages of the depression have gradually been absorbed, and their place must be taken by the products of current activity. Consumers injured by the slump in trade have been forced to economise upon such products as clothes and boots ; but these ultimately wear out and must be replaced. People marry and have children, and the urgent needs of society steadily increase. In short, the depression in the earlier stages generally overshoots the mark, and itself generates an increase in trade up to the point necessary to maintain a steady flow of those requirements of life which are usually regarded as the irreducible minimum. Although wages have been reduced during and on account of the slump, and a number of workers have either been thrown out of work or placed on short time, the effective demand for finished products has not been correspondingly reduced ; for first, prices have fallen considerably, and usually more than wages ; and secondly, savings are reduced, and purchase on the credit system in retail shops is increased.

The revival in trade does not produce an immediate rise in prices. Competition for orders remains keen ; there are more offers than acceptances. Moreover, the earlier growth in the volume of trade enables firms to spread their overhead charges over a larger number of products, and to effect economies in other directions. The costs of production per unit thus tend to fall. But the revival dissipates the feeling of pessimism and creates a new spirit of hope, which in due course changes to confidence. Firms

begin to overhaul their plant and machinery, and place orders for renewals; some may be already tempted to look further ahead and to provide for extensions. The resulting orders react upon the constructional trades, which now share in the revival. Employment shows a marked increase, and traffic returns provide more pleasant reading. The revival, bringing with it a greater volume and continuity of employment, increases the purchasing power of industrial and other groups of workers, and reacts upon the luxury trades. Each industry in turn reacts upon and is itself reacted upon by a multitude of other industries, and employment approaches its "normal" condition, without having quite reached it.

Prices now show a marked tendency upwards. The rise is more pronounced in wholesale than in retail prices; in raw materials than in semi-manufactured goods, and in the latter than in finished products. Wages, too, begin to rise, though they lag behind prices.

At that stage of the trade cycle when the increase in demand and employment is strongly reflected in prices, business men become more optimistic and proceed to make elaborate preparations for development. The demand for capital for investment shows a marked increase. New companies are floated and existing firms extend their operations. There follows a big demand for the products of the constructional trades, such as steel manufacture, engineering and shipbuilding, which now enjoy what may truly be called a boom. Broadly speaking, these trades are concerned with replacement and extension of industrial equipment, and, as is shown in the chapter on the shipbuilding industry, a relatively small increase in the total equipment of industry means a heavy pressure upon the resources of the constructional trades. It is here, therefore, that we usually find the first evidences of a boom in trade; and it is at this stage that prices, particularly of raw materials, break away from their moorings. There is evidence, moreover, that public authorities intensify the boom at this stage by placing orders for development.

The prosperity enjoyed by the constructional trades

spreads quickly to others through two main channels, raw materials and the wages of the workers. The general demand for labour increases, and all the employable unemployed are absorbed. Overtime is worked ; old establishments, once regarded as obsolete, are pressed into service. The volume of production approaches the maximum of which society is capable. If, here and there, an industry is left high and dry by the tide, the workers are drawn into others, and the factories, where possible, adapted to other uses.

The activity in trade entails heavy demands upon capital. During the depression rigid economy was the order of the day. The channels of investment were closed. Capital lay idle in the banks, discount rates were very low, and as the speculative spirit had been largely destroyed by the slump, and people sought security rather than the chance of large profits, the prices of fixed-interest bonds were high and of ordinary shares low. The growth in the volume of trade, however, altered the situation. Even its initial stages necessitated the employment of more commercial capital, and this the banks readily provided. Further demands for accommodation were made when trade increased and prices began to rise, but there were ample reserves at the banks, which were still eager to lend at low rates, though they scrutinised with care the securities which were deposited by the borrowers. Later the demands still further increased, not only because the volume of trade increased, but also because the marked rise in prices and wages necessitated a larger amount of capital to finance a given volume of trade. Moreover, cash depositors withdrew increasing sums as new developments took place and fresh avenues of investment were opened up, and a larger amount of cash found its way into the pockets of the people, who now paid more for everything and required more petty cash. At the stage when general trade is brisk the commitments of the banks are large, though not unreasonably so, in relation to their reserves.

The business community has now been caught up by the wave of optimism. Most people anticipate and prepare

for, and thus accelerate and intensify a further rise in prices. They become eager buyers, and place contracts which are frequently beyond their real needs, actual or prospective. Meanwhile the producing capacity of the community has reached, or almost reached, its limits. Deliveries are more difficult to guarantee, and immediate delivery is regarded as of considerable monetary value. Prices rise sharply ; large profits are made in industry ; wages rise in sympathy ; dealers are eager to buy, because they feel confident of a profitable market. A speculative boom is in full swing.

But it generates a check upon its own progress. The boom is fostered by anticipations, and these are falsified by events. Just as the first evidences of an industrial boom are generally found in the constructional trades, so too, are the first evidences of the end of the boom. The prosperity of this group of trades is conditioned by continued demand for industrial equipment, a considerable part of which is required by the group itself. The purpose of industrial equipment is to provide the consumption goods and services needed by the community. The prices of such goods, it has been shown, have already risen to a high level, but towards the end of the boom the costs of manufacture reveal an even more pronounced rise. The prices of raw materials advance by leaps and bounds ; wage movements at this stage reveal not only the rise in the cost of living, but also, in many industries, the scarcity of labour ; efficiency diminishes, partly through employment of less skilful workers and the utilisation of old plant discarded during the depression, partly through the laxity of management, partly through the fatigue due to excessive overtime, and partly, in some cases, through the leisurely methods of workers who now enjoy relatively high weekly earnings, and from whom the fear of unemployment has been removed for the time being. Extensions have been made and new factories erected at a time when construction costs are high and interest charges heavy. Thus both the running costs of manufacture and the overhead charges show a marked increase over the standard

prevailing during the earlier stages of prosperity. Moreover, manufacturers and others encounter considerable difficulty in their attempt to transfer the additional costs to their customers in the form of higher prices. Two illustrations of this difficulty may be submitted. In some departments of economic activity, such as public service and transport, the prices or charges are almost inevitably more stable than the prices of concrete goods which are bought and sold daily upon the speculative market. The former are controlled by law or custom. Again, in industries which have been rapidly expanded during the earlier stages of prosperity, the additional supplies now flow into the market and check the rise in prices, which thus tend to fall behind the prices of other commodities. The manufacturers and transport agencies whose powers are thus curtailed find the margins between costs and prices dwindling. They now aim at consolidating the position they have gained rather than extending their establishments further. Their orders to the constructional trades dwindle, and the latter, in turn, cease to extend. For some time they may be fully employed upon contracts already placed ; but these contracts of an earlier date, made when the cost level was lower, often prove disappointing from the financial point of view ; and when they have been completed, depression sets in.

Meanwhile the merchanting group are still carried along by the wave of optimism. They buy in order to sell, and make their profits on margins. Anticipating a continued rise in prices, they buy heavily and place orders freely. They work largely on commercial capital borrowed from the banks ; they obtain and give credit freely. Bank loans are increased and reserves are materially reduced ; an elaborate network of credit is woven in which manufacturers, large merchants, and small dealers are enmeshed. Floating capital grows scarce, the money market becomes stringent, and the bank rate of discount rises. The growing caution of the manufacturers, to which we have referred, is soon felt in commercial circles ; combined with the high charges for loans, it forces merchants to unload the stocks which

they have been holding in anticipation of higher prices, and the upward movement is spent. Optimism has given way to uncertainty and hesitation, and these may in turn be followed by fear. Trade depression then sets in. It is at first held in check by contracts placed at an earlier stage ; but as these are completed it grows worse, and is intensified by the existence of large stocks which are only gradually reduced. Profits are converted into losses. A slow and painful process of liquidation is accompanied by unemployment, reductions in wages, and a rapid fall in prices. Consumption is diminished, to a small extent in perishable necessities, to a greater extent in luxuries, and to a still greater extent in durable goods (such as furniture and clothing) ready for consumption. But the fall is most marked in the demands upon the constructional trades for capital goods, such as ships and engineering and steel products. Thus the point is reached at which the analysis was started.

We have already drawn attention to the international character of trade fluctuations. Industry and commerce ignore political groupings and national frontiers. Just as depression or activity in one industry spreads quickly to other industries related and remote, so too (by influencing the demand for imports), when it appears in one country it spreads quickly to others, and through them to the remaining industrialised countries of the world.

It should further be observed that the exports of this country represent, to a considerable extent, current investment of British capital abroad. There is clearly a connection between trade booms in older investing countries and the opening up, with the aid of borrowed capital, of one new country after another. Capital development takes place in spurts, which are followed by periods of stagnation. And these alternations synchronise with those alternations which are found in domestic trade. They even intensify the latter, for a greater proportion of foreign trade than of domestic trade is connected with the provision of industrial equipment.

Explanations of the Trade Cycle

Industrial fluctuations have been the subject of inquiry by many writers on economics, and in recent years by public commissions and private committees. Almost all such investigators observed the regularity of their appearance and the similarity of their general features. Influenced by their resemblances, many have sought a single operating cause; and as they stressed different groups of facts relevant to the trade cycle, they arrived at different conclusions. It will be sufficient if we draw attention to three or four theories which fall into different categories. Over forty years ago Jevons startled the world by apparently establishing a causal connection between sun-spots and the trade cycle. He discovered a close coincidence between the periodicity of the appearance of spots on the sun and the periodicity of the movement of trade. He then proceeded to demonstrate the connection between the appearance of sun-spots and the failure of harvests, and the further connection between the failure of harvests and industrial depressions. Most people would agree with Jevons that the two great branches of industry—agriculture and manufacture—are intimately related. Thus, for example, a small harvest affects transport directly, and, indirectly, shipbuilding and the iron and steel industries. An abundant wheat harvest in South America would not only create the desire and the power to exploit new areas, but increase the confidence of investors abroad in the future prosperity of that part of the world. Even if there is no further capital development the agricultural community is able to purchase larger quantities of consumable goods from the manufacturing regions. Thus the demand for cotton goods from Lancashire is largely determined by the monsoons of India, which are anxiously watched by Manchester merchants. If the harvests are so plentiful as to produce a serious glut, and thereby to reduce prices to such an extent as to injure the agricultural community, the fall in the prices paid by the rest of the community increases their power to purchase manufactured goods.

While admitting the connection between agricultural and manufacturing prosperity, critics of Jevons have pointed out that his theory does not fit the facts. The statistical coincidence between sun-spots and the trade cycle no longer exists. Although spots on the sun have appeared at slightly longer intervals during the last fifty years, there is a marked tendency for the trade cycle to grow shorter. Further, the multiplication of agricultural areas has lessened the fluctuations in the supply of the products of the land, and recent improvements in the marketing and storing of agricultural products have reduced the importance to manufacturing industry of fluctuations in the harvest in different parts of the world. Apart from such modifying influences it is held that variations in harvests should be regarded as a factor influencing the course of the cycle rather than the ultimate cause of its existence.

Other writers find the explanation of the trade cycle, not in natural phenomena, but in certain flaws in the economic system. Of these alleged explanations the best known and most widely endorsed is "under-consumption" or "over-saving." Mr. J. A. Hobson and others argue that a disproportionate amount of the nation's income consists of rents, royalties, interest, and speculative profits, and is concentrated in the hands of comparatively few groups. These are so wealthy that they cannot possibly spend all their incomes on consumable goods, and are therefore compelled to save. Their savings are invested in capital goods, which in turn are the instruments for making consumption goods needed by the community as a whole. But the vast majority of the population are relatively poor, and the community is thus unable to purchase the huge quantities of final consumption goods which the invested capital steadily produces. Depression and unemployment follow, which convert profit into loss and, for the time being, reduce the rate of saving and investment, and ultimately restore equilibrium. The fall in prices characteristic of depression does not provide a remedy, for such a fall is accompanied by a reduction in wages and therefore in the purchasing power of the community.

The theory which we have given in bald outline has been subjected to searching criticism by writers who admit that the present distribution of wealth cannot be justified, but argue that it does not afford the true explanation of the trade cycle, which would still exist if the nation's income were less unequally divided. Professor Mitchell, for example, points out that "if the chief stress arose from the lagging of consumers' demand behind the supply of consumers' goods" one would expect the prices of such goods to fall before the prices of raw materials and producers' goods. Such, however, is not the case. "What is known about the behaviour of prices favours the view that the impossibility of defending profits against the encroachments of costs is experienced earlier by enterprises which handle raw materials and producers' goods. This conclusion is confirmed by a comparison between current reports concerning retail trade, jobbing and manufacturing at times when crises are approaching." Mr. Hobson is accused here of offering a "speculative solution" of a "quantitative problem." Others, too, argue that he assumes precisely that which stands in need of proof—for example, that the purchasing power of the community falls *pari passu* with the fall in prices. It is maintained that there is strong presumptive evidence to the contrary.

In a memorandum on "Correctives of the Trade Cycle" which forms part of the present volume, Professor Pigou lays great stress upon the psychological factor in the trade cycle, and in so doing he gives expression to a view which is widely held at the present time. It was clearly in Sir William Beveridge's mind when, in his book on *Unemployment* (1909), he argued that in the last resort the trade cycle was due to "the simple and well-nigh universal fact of industrial competition." When demand increases, every competitor tries to secure as great a share as possible of the growing market. "Inevitably, therefore, all the producers together tend to overshoot the demand and to glut the market for a time. This is a result, not of wild speculation nor of miscalculation of the total demand ; it

must be a normal incident wherever competition has a place at all."

The importance of the psychological factor further becomes evident in the relations between business men and their banks during a period of trade expansion. The report (1923) of a committee of the United States President's Conference on Unemployment points out that "credit operations are of major importance in the upward movement of the cycle, and in precipitating the decline, so that the first and most important method of controlling the cycle and preventing excessive expansion should be found in the fundamentals of our banking situation." The committee thus endorsed a view which had already been rapidly gaining acceptance in America as well as in this country, and had achieved considerable prominence during a period when financial conditions had been upset by the War and the inflationary policies pursued in the early days of peace. There is, however, not yet common agreement as to the part played by monetary conditions in determining the psychology of the business world. Thus in Professor Pigou's paper, "It has been tacitly assumed that wave movements in business confidence can take place independently of the monetary and banking arrangements that prevail." But a man holding such views as Mr. R. G. Hawtrey might criticise that assumption on the following lines :

(1) Professor Pigou has not really justified his foundation of the cyclical movement of trade on "errors of optimism and pessimism." It would be truer to say that what he calls optimism and pessimism are substantially *correct* anticipations of rises or falls in prices.

(2) If price stabilisation were attained through a bolder use of discount policy, the effects of optimism and pessimism would be corrected whether or not they were errors.

But the losses incurred by the business world in 1920 suggest that "errors" play a not unimportant part ; and in any case, those who pin their faith to credit control have to meet the practical difficulty of showing that in a country so bound up in international trade as England,

a price stabilisation policy can withstand the disturbing effect of foreign complications.

It is no part, however, of our present task to make an elaborate investigation of the views which have been described above. Nor is it necessary to examine any more of the one hundred and fifty explanations which have been given of the trade cycle, some of which are briefly discussed in Professor's Pigou's paper. If the above account is approximately true, it is evident that there is no single explanation, and therefore no single solution. Moreover, we may observe in passing that the initial fact of misjudgement in the world of supply and demand would not necessarily be done away with by abolishing the system of private enterprise. Even if on other grounds State control of all production were acceptable, there is no reason to suppose that Government officials would forecast requirements more accurately, particularly capital requirements and those of commodities which enter into foreign trade. Indeed, the history of attempts made by various Governments from time to time to modify the fluctuation of prices by controlling supplies hardly encourages experiment. Such attempts have usually meant that output has been maintained at a time when the only wise course was to curtail it, and ultimately have involved great financial losses.

There is, however, as we have already stated, increasing agreement among experts that when the machinery of production is dislocated, a wise use of the machinery of credit can check the mischief. It is also evident that anything which assists us to obtain a more accurate knowledge of what is happening will help to prevent those disasters which are due to misjudgement. Finally, it is suggested with reason that the harmful effects of the cycle may be mitigated if certain kinds of production can be stimulated, artificially if necessary, at a time when trade is bad, provided that such stimulation is really a transfer in kind of production which would otherwise be carried out when things were booming. In the next chapter we comment briefly upon these three possible remedies.

CHAPTER IV

THE TRADE CYCLE—SOLUTIONS

WHETHER we base our views on the history and controversies centring round the boom of 1920, or upon theoretical analysis, we find that some students regard operations of currency and credit as being the initial cause of trade movements. Others merely regard these monetary phenomena as one among many influences, and often not as a chief or controlling influence. We need not, however, pursue this controversy, for whatever view may be held as to the part played by credit from time to time in trade movements there is unanimity of opinion—a unanimity which has become more apparent since the War—that control of either credit or currency, or both, might be used to limit upward movements of prices and production, when a forward swing of the cycle is in progress. It is recognised that currency policy cannot to the same extent stimulate trade in a depression; but if the upward movement is limited, the downward movement is likely to be limited to a somewhat similar extent. We have therefore to consider the practical problem of what is possible in this direction in England at the present time. The credit situation in this country is in the hands of three parties, the Treasury, the Bank of England, and the Joint Stock Banks. The last are the agents who place credit money in the hands of the public. By tradition, these banks never let their liabilities increase beyond the point at which the ratio of liabilities to their cash in hand or at the Bank of England is greater than 100 to 15. They may, however, and often do find themselves with a stronger

reserve than this, and in normal times there will be some margin for the extension of credit. Moreover, if, as has been the case in recent years, they hold a considerable amount of Treasury Bills, they are in a position to increase their balance at the Bank of England by letting their Treasury Bills run out. But their holdings of these bills are to-day far less than in 1920, and as time goes on they are likely to shrink still more and be replaced by normal short term bills. As this happens, the power of the banks to force the hand of the central institution will diminish. The Joint Stock Banks, therefore, are only to a secondary extent responsible for the volume of credit money after it has swollen to what may be called its normal maximum.

The main responsibility lies between the Treasury and the Bank of England. The Treasury influences the situation in two ways: first by deciding the form which the floating debt takes at any moment, and in particular whether it finances its needs by Ways and Means Advances or by Treasury Bills, and secondly through its control of the currency note issue. As regards the first point, its need of constantly renewing its floating debt is necessarily one of the leading factors in the market for short term accommodation, and in case of stress the Government might be compelled, as it was in the spring of 1920, to cause a scarcity of credit on the market. But its power in this respect is much less than four years ago. In any case the Treasury would have to secure the concurrence of the Bank of England if it desired to replace its Treasury Bills by Ways and Means Advances from the Bank of England. So long as the control of note issue is in the hands of the Treasury there is, at all events, a great potential machine in its hands for the manipulation of currency. Except in regard to any revolutionary act which it might take in regard to the note issue, the Treasury cannot now readily initiate action for controlling credit.

There remains the Bank of England, whose power is much the greatest of the three influences in this country. Its rate is not a discount rate merely, but is the determinant of the rate charged for advances by financiers. If this rate

is not followed it has means of making it effective. Its power in this respect, however, is not so readily exercised as in the days of the gold standard, and in a world where the objective of currency policy is so much open to doubt, there is reason to think that the Bank of England would be very chary of using that power unless it was sure that it was in harmony with the balance of financial opinion. The questions which must be answered in this connection are the following: (1) What should be the objective of the Bank of England discount policy? (2) What criteria should it observe in pursuing these objectives? (3) Can it be sure of securing the necessary support and confidence, and is the Bank of England a body in which this power over the economic life of the nation should reside?

As regards the first question, the issue lies between a policy designed in order as soon as possible to get back the gold standard, a policy which considers stable internal prices as the most important objective, or a policy on which the Bank of England, ignoring specific objectives of this kind, would consider primarily the current state of business; whether, for example, there appears to be undue or unhealthy speculation or disproportionate expansion in various directions. Since the Armistice, the official monetary policy of this country has been directed towards the restoration of gold payments in England, if not for internal certainly for external purposes. But by some this policy is held to have been responsible for excessive violence in the slump of 1920, and by others, such as Mr. J. M. Keynes, it is considered a bad policy in any case. Professor Pigou, however, in the paper printed herein says (p. 121): "So far as the United Kingdom is concerned, until the gold standard has been re-established, more elaborate improvements in our monetary system are not practical politics." If this view is interpreted very broadly, and with full regard to the necessity for avoiding violent changes at home, we believe it has the assent of the majority not only of bankers and investors, but of business men who are on balance borrowers, particularly in consideration of the

likelihood of many changes of Government during the next few years, and of the contingency that the Governments in power may not possess the whole-hearted confidence of a majority of the nation. Those who are in favour of this course are not actuated merely by conservatism. We do not, for example, attach importance to the argument that the nation will commit something like a breach of faith to its creditors if it does not eventually return to the gold standard. If such a return can only be made by a radical change in the level of prices, it would inevitably mean, as all such changes mean, favouring one section of the community at the expense of another. Still less is there anything in the idea that we ought to return to pre-War prices ; that would be the gravest injustice to the country as a whole, for it would saddle upon it an enormous debt which would be nearly twice the value in commodities of the debt originally borrowed. Moreover, we attach the greatest possible importance to the economic advantages of a stable price level. If it were known that such a policy was to be pursued, a large element of uncertainty would be removed, and much of that unbalanced economic activity which arises from the expectation of wide price movements would be checked. But under present circumstances that policy would mean the drawing up of entirely new rules for credit and currency control, and it would indeed be an experiment. Moreover, it would involve abandoning the attempt to arrive at a more stable exchange basis, and this is of the very greatest importance to that world of financial activity centred in the city of London. Even if this country can understand and come to trust a "managed currency" aiming at a stable level of prices, but without a tangible standard of value, it is not to be expected that this will be understood throughout the world ; and Great Britain's prestige as the international money market and discount house, as well as stockbroker of the world, would certainly be shaken. Credit is a very intangible thing, and we believe the instinct of the business world is perfectly sound in thinking that it would suffer if our declared policy implied that we did

not attach importance to restoring our exchange in relation to the dollar.

But, as has already been indicated, there are practical difficulties in attempting to follow a policy aiming merely at stability of British prices. One is that there is as yet no shadow of agreement as to the prices to be stabilised and the index number to be used for this purpose. Again, the theory requires that action should be taken before the movement indicated by the index numbers has begun. If it is hard to get any simple index of the trade cycle, it is infinitely harder to get data from which its movements can be predicted with sufficient certainty to form the basis of action. Great progress is being made in economic knowledge, but we are a long way yet from the point at which credit control would be an exact science and not, as it is under present circumstances, an art. It is too soon, in our opinion, for any one to say what is a "normal" level of general prices; and unless that can be asserted and believed, stabilisation schemes have no practical foundation. Nor has any scheme of stabilisation been suggested which really takes into account the City's present power of creating £1300 M. of credit by means of acceptances to foreigners. In the succeeding section we endeavour to show how increased publicity for economic data may ultimately provide the Bank of England both with the means of adopting new criteria for changes in bank rate and with the public support without which such changes are impracticable.

In these circumstances, any new policy of credit control would throw an enormous responsibility on the Bank of England. The directors of that institution, haphazard as their selection may be from some standpoints, undoubtedly command the respect of the financial community. But beneath the surface there is a certain feeling that the interests of industry and finance are not necessarily the same. Criticism of financial policy by the leaders of manufacturing industries has been pretty freely expressed in the last few years, and we think that there would be uneasiness if it were known that the Bank of England intended to check trade at the moment when after long depression it

was really on the upward move, in order to maintain some level of prices the justification for which would inevitably be a matter of acute controversy.

But though we have enumerated these difficulties, we do not overlook the fact that the declared policy of getting back the exchange to parity with the dollar, and maintaining it there, is faced with at least equal obstacles. The future movement of prices in America is obscure, and this at least can be said with certainty. If the return to par involves long-drawn-out deflation it will certainly not commend itself in this country until we have got much nearer to the point of absorbing the unemployed. Unless, therefore, American prices move upwards the Cunliffe policy must remain in suspense. Mr. J. M. Keynes, in his recent book on *Monetary Reform*, poses the dilemma of credit policy as one of Stability of Prices *versus* Stability of Exchange. It may appear from what has already been said that by a modified confidence in a gold standard and a limited belief in the good effects of stable prices we have answered this question in favour of stability of exchange. That is not, however, the view which we take. The dilemma is in our opinion too obvious to be real. We share the opinion that credit control is at present an art rather than a science, and what we do urge is that public support should be given to a policy by the Bank of England which endeavours, perhaps with varying success, to have both groups of considerations in mind. What seems clear to us is that the Cunliffe Committee's report, which dominates monetary policy to-day, needs reconsideration. By the autumn of this year, the purely temporary effects of the war on prices will probably have become unimportant. At that time, then, it seems desirable that a new Committee on Currency and Foreign Exchanges should be set up. Its terms of reference, which will need very careful drafting to avoid misconception abroad, should be broadly :

- I. To inquire how far the maintenance of the stability of English currency in terms of gold can be reconciled with the control of credit here in order to reduce cyclical unemployment.

2. Whether more frequent alterations of bank rate in the light of *anticipated* movements of importance in home commodity prices are compatible with the present organisation of the Bank of England.
3. To recommend any changes considered desirable in the Bank and its relations to the Treasury.

We believe that action on these lines is likely to produce an important diminution in the violence of cyclical movements in trade and consequential unemployment, without interfering with the confidence of the public at home and abroad in the independence and soundness of this country's financial machinery.

Economic Information

Whatever explanation is accepted as to the main causes of trade cycles, it is common ground that certain phenomena are present in them all. Perhaps their most important characteristic, apart from the actual movement of prices, is that production, at all events in those articles which are leading the movement, tends to run ahead of consumption, and stocks accumulate. Those who hold that action by the Bank of England can check the disharmony which occurs at such times, and those who hold that misjudgement of the market by the producers and merchants is chiefly to blame, will both agree that no remedy can be intelligently applied unless the facts are known. Most people would also agree that if the true state of affairs were known and understood the violence of any movement of this kind would automatically be restrained, just as in any individual market ups and downs of prices would be modified if all operators had complete cognisance of existing supplies or supplies coming forward. Indeed, the Conference which sat in Washington in 1921-22 to consider the problem of unemployment came to the conclusion that a much fuller knowledge of the facts of economic life will in the near future be the chief check upon trade fluctuations. In this matter of economic information the United States is considerably further advanced than any other country in

the world, which may account for the fact that in the decade before the War the shortening of the trade cycles seems to be especially pronounced in the United States, and that in the last two years that country has experienced a record production which did not involve an excessive rise of prices or speculative accumulation of stocks. A survey of the facts contained in the monthly reports of the American Ministry of Commerce is very striking to those trained on English tradition. The figures include :

Production of crude petroleum, coal, iron ore, copper, lead, zinc, gold and silver. The quantity marketed of wool, cattle, pigs, sheep, dairy produce, and milk in New York. The quantity marketed of all kinds of grains, vegetables, fruit, cotton, and miscellaneous crops. The volume of manufacture of half a dozen food-stuffs, the consumption and manufacture of wool and cotton, output of iron and steel products, boots and shoes, chemicals, refined copper, tin, zinc, automobiles, tyres, and roofing. The output of electrical power and the total building construction. Stocks of cotton, iron, timber, pulp, oil, bricks, and non-ferrous metals. The turn-over in half a dozen wholesale trades and some six or seven hundred stores engaged in retail trade.

In this country the only monthly production figures we have are coal, iron, and steel outputs, the two latter collected and published by the voluntary organisation of the industry.¹ We have monthly information as to the goods moving by rail, but hitherto this information has been several months out of date when published. As to foreign trade, the monthly statistics relate to value only in general, but quantities are also stated of the principal foods and materials, and of some manufactured goods. Complete details of quantities are given in the annual reports, published after a long interval. Every quarter the values of the totals of imports and exports are recalculated at prices of an earlier date. Our figures of unemployment are the only ones in this country which are appreciably better than those of other nations. Information as to finance, though fairly satisfactory, still leaves many gaps.

If we are to have adequate knowledge on this subject we need information under the following heads :

¹ The searchers after truth will find elaborate official statistics of the amount of gold mined in Great Britain.

1. The course of prices.
2. The volume of production of important commodities.
3. Stocks of leading commodities.
4. Quantity as well as value of foreign trade.
5. The consumption of material, to be gauged partly by a study of the preceding three series of figures.
6. The consumption of finished goods including figures of the turn-over of retail trade.
7. Up-to-date analysed information as to railway traffic.
8. Unemployment statistics in detail.
9. Wage movements.
10. The quantity of legal tender money in circulation, whether metallic or paper, and the situation as to gold reserve.
11. Quantity and rapidity of circulation of bank money.
12. Shipping statistics, including freight rates.

In commenting on these items we shall not attempt to limit ourselves by what we think may be done in the near future, but shall suggest a programme of what will be needed if we are to gain control over the trade cycle.

(1) We are accumulating increasing knowledge of the behaviour of index numbers. There is no index number in existence which pretends to measure what may be called the purchasing power of a unit of currency. But it is not perhaps necessary to aim at theoretical perfection. What is wanted is an index number which will measure the booms in those activities which are most sensitive to movements in the trade cycle. For example, the price of postage stamps or railway fares, the wages of civil servants, and the incomes of people living on trustee securities are all elements in the purchasing power of currency. But it is not necessary to tone down fluctuations in prices and wages in stable trades, because such items move very slowly. The material for compiling adequate price index numbers exists in increasing volume. It is a technical matter which we need not here discuss to decide what method can best be used for the purpose in view.

(2) As regards production, it would be easy for various trades which produce goods sufficiently standardised to be capable of measurement to compile figures of output. Indeed, it is probable that many trade associations have a fair knowledge of actual production, which could be made

more complete and published without detriment by agreement between themselves and the Government. For example, the number of motor cars in one or two broad classes could be easily obtained. The number licensed is already known, but the figures are not declared promptly, and the difference between the licence figures and those of production is important as showing the accumulation, if any, of stocks. If the Government insisted on a regular biennial census of production, it is probable that the associations would get into the way of compiling prompt information as to their output. The question of production, and of information compiled by industries, is also of very great importance in connection with securing confidence on the part of workpeople. This point is referred to in a subsequent section.

(3) The state of the stocks of materials and finished goods in important trades could probably be ascertained from the same sources of information.

(4) Quantity and value of foreign trade has already been mentioned.

(5) and (6) As regards consumption, figures exist as to what is called the consumption of commodities, such as tea and sugar, which are taxed and released from bond ; but this is not true consumption, as stocks may accumulate with wholesale or retail firms. In the case of articles of common use, something might be obtained from the co-operative movement if it could see its way to get quick returns from the associations throughout the country, or from large and multiple stores ; and if the right attitude towards publicity were fostered in this country it should be possible to get composite figures of the situation, not of individual firms, but of the trend of consumption generally. Although there are obvious difficulties in obtaining this information it is not impossible to obtain it, as they are getting it at the present time in America.

(7) Railway information will probably be available more rapidly when the machinery of the railways under their new management is in smooth working order.

(8) There are only points of detail relating to collection,

etc., which need consideration in the case of unemployment figures. But to secure perfect comparability in the statistics emanating from the National Unemployment Insurance scheme, changes should be made with great hesitation, and if made, figures which make it possible to carry over the break should be afforded.

(9) The Ministry of Labour reports changes in wages, and has the material for compiling wage index numbers, rates of wages and of earnings, but there has been a tendency in the last year or so to curtail the amount of information that is made public. This tendency should be checked.

(10) The amount of legal tender in circulation is known so long as the currency is on a paper basis.

(11) As regards bank money, the chief improvement immediately desirable is that the balance sheets of the big five should be more fully analysed. In particular, their holdings of Treasury Bills should be distinguished from trade bills, so that it can be seen at once how much is being done by the banks to put money into circulation for trade purposes.

These suggestions do not provide a panacea, for statistics only record what has happened, not what is going to happen; and in any case the statistics of one country, however perfect, could not guard it from difficulties arising in countries where other conditions prevail. But it is extremely desirable that Great Britain, the chief trading nation of the world, should set an example which may be followed by other nations, and that gradually the chief countries at least may arrive at reasonably adequate knowledge of the world's production, and of the financial situation. We can at all events start by the obvious reform of co-ordinating the work of Government departments in this field, and publishing information such as we possess in a cheap and intelligible form.

Postponement or Acceleration of Government Work

The suggestion that public bodies, without harmful economic effects, may adjust their activities so that their

production is increased in bad times and diminished in times of boom, raises questions of economic theory on the one hand and a number of practical questions on the other. These have been investigated on behalf of the Committee by Dr. Bowley and Mr. Stuart, and their conclusions may be summarised as follows :

(1) The argument that the scheme will create as much unemployment as it remedies, because it takes away in rates or taxes money that probably would otherwise be spent in providing work, is based upon a misapprehension. The scheme is one for transferring the date at which the work is done, and does not in the long run add to the total which is taken from the taxpayer by the Government. It might create an equal volume of unemployment if it meant adding to taxation when times were bad ; but it is not impossible to invent financial devices to carry over funds raised from the community from good to bad times. It is imperative, however, that such plans should be developed in advance.

(2) The investigation shows that in the normal cycle of trade before the War the capital expenditure on public works by local and central authorities, which would have had to be redistributed over the decade in order to even out the trade cycle, would have been £65,000,000 out of a total expenditure in ten years of £340,000,000. These totals would be increased by about 80 per cent if allowance is made for increased prices, wages, and population.

In the trade cycle immediately preceding the War, the actual expenditure was incurred in a manner very nearly the exact opposite to that which the scheme suggests. During the two good years, 1906-7, when £73,000,000 were actually spent on capital, the amount that should have been spent under the policy proposed was £38,000,000. In the three following bad years, when £86,000,000 were actually spent, the policy would have required £165,000,000. In the three good years which followed expenditure was £83,000,000, whereas according to the policy it should have been £36,000,000. Thus while there is more than enough capital expenditure for the purpose proposed, it tends to be spent

rather in good than in bad times. The present depression is an exception, for the War postponed so much constructional work that there are very large arrears which, with Government help, have been put in hand and are contributing to ease the present situation. Professor Bowley, however, points out first that the plan can only succeed if the work is put in hand where it is needed. It will partake of the uneconomic character of relief work if an attempt is made to spend the capital where there are the greatest number of unemployed. Moreover, it mainly offers employment for those engaged in constructional work and for unskilled labour. The scheme cannot help, except indirectly, acute unemployment arising from depression in export trades, such as textiles, shipbuilding, etc.

(3) The policy is mainly in connection with loan expenditure. It does not seem practical to suggest accumulating funds out of rates in good years; but it is suggested that grants-in-aid might be held up in good years or advanced in bad. In any case, the finance of the scheme would chiefly have to be controlled by the Central Government through their operations on the capital market.

(4) The chief difficulty, however, is in connection with the practical administrative detail. The scheme can only be worked with the co-operation of local authorities; but experience shows that the latter are not very willing to take long views, and that continuity of policy is likely to be interrupted by the issues raised at local elections. It is said that in practice local expenditure is always put off, in order to economise the rates, until it is absolutely imperative, and then it has to go forward in several directions at once. For example, town extension needs the improving of roads, building of schools, and the extension of all services at the same time. In short, it is claimed that the bulk of new capital works, like expenditure on replacement and depreciation in business, must go on all the time.

But as a matter of fact many large private concerns do to some degree carry out the proposed policy, and we have little doubt that as the nature of the trade cycle comes to be better understood and its movements more accurately predicted,

they will do so, in their own interests, to an increasing extent. The political considerations, mentioned in the report on this subject, are real difficulties, and thought and careful planning are needed to overcome them. If, as we hope, the present trade improvement continues for at least another year, we have time, if we use it promptly, to complete measures for dealing with the next period of depression.

CHAPTER V

OUR ECONOMIC POSITION

OUR second main subject of inquiry concerns the influences that will affect Britain's economic future, in view of the new factors that have come into play in the past decades.

But before coming to this point, there is a preliminary question that may be briefly disposed of, namely, what permanent effects, if any, on our competitive position have been produced by currency depreciation abroad. Exchange fluctuations have clearly played a large part in recent years in the industrial field, and at times have perhaps been the predominant influence in the calculations of manufacturers. We do not under-estimate the difficulties which currency depreciation abroad presents. But we think it important to draw a distinction at once between depreciated and depreciating currencies. So long as depreciation in the foreign value of a currency proceeds at a different pace from that of its domestic value, *i.e.* so long as the internal price level has not risen as rapidly as the foreign Exchange has fallen, and violent fluctuations in either are still going on, it is obvious that opportunities of easy profits are presented to traders as much as to tourists, and that British trade may be one of the sufferers, partly because the manufacturers of the country concerned may be able to sell for the moment at ridiculously low prices, and partly because of the uncertainty as to world prices which is caused by the existence of such quotations. In actual fact, during the two or three years prior to last autumn, this bonus upon export has existed in the case of Germany. Other conditions, however, have operated to prevent a flood of

exports from that country, and consequently Germany's exports have been very much less than in pre-War times. The low quotations current have, from time to time, been a seriously disturbing element in European and indeed in world trade. But depreciation, after all, cannot go on for ever ; in practice it is arrested either by stabilisation or by collapse. There seems to be little evidence that when that stage is reached British competitive power will be permanently affected. In the papers that follow by Professor Cassel and Professor Bonn, this very important point seems to us to have been clearly brought out, first in general, and second in the particular case of Germany.

Many English manufacturers fear that as a result of inflation German industry, relieved of former debenture debts, well equipped for increased output during the inflation boom, and freed from part of the burden of taxation owing to the disappearance of Government debt, is likely to prove a more formidable competitor than ever. But the aftermath of depreciation, Professor Bonn suggests, is a permanently exorbitant rate of interest for new capital, less efficient labour, and the necessity, for industry, of bearing *all* the taxes of the country, owing to the disappearance of the *rentier* class. This is certainly the case with Germany at present, and if these effects are lasting, the assumption that the country benefits from repudiating its internal obligations by inflation will have to be modified.

The effects of a *depreciating* currency are often important but temporary. Those of a *depreciated* currency, with its consequent revolution of social organisation, decline of credit abroad, and lowered standard of life, cease to be a currency question pure and simple, but form part of the problem of the world's prospective capacity to absorb British goods.

The former effects are, we may venture to hope, passing away. The latter are more permanent, for they appear to imply a reduction both of the producing power and the purchasing power of the country concerned. Inflation, like drugs or artificial stimulants, when continuously indulged in, finally ceases to have any stimulating effect at all, and

leaves the patient with greatly reduced vitality. One of the factors in world prosperity is thus weakened. All are sufferers, the country whose currency is depreciated most of all. The process of recovery may be rapid in a case such as that of Germany; but it will involve the correction of present abnormal conditions. For example, one influence of inflation has been to wipe out the interest charges formerly paid by German industry, and people are apt to assume that this is a permanent asset in Germany's favour. But we are already seeing in Germany the effects of a shortage of circulating capital, the result of which is that industry is paying enormously high rates for the new capital which it is compelled to borrow. This aspect of the problem is clearly set out in the memorandum by Professor Bonn.

While, however, a currency depression is not an influence which has produced or will produce any permanent alteration in the distribution of world trade, we cannot dismiss other effects of the War as of little permanent importance. The Brussels Finance Conference, in its survey of the world's situation, pointed out in 1920 that "in every country international trade has been impeded, dislocated, and diverted from its normal channel. The inability of Europe to export during the War brought normal purchasers of her goods to look elsewhere for their requirements, to develop production in unaccustomed channels at home or in other countries oversea. Simultaneously Europe's need for imports compelled her to sell a large part of her capital holdings abroad, which are not therefore now available for her present needs." The example of Australia, whose exports of raw material were entirely confined during the War to allied countries, or, so far as they could not be moved for lack of shipping, were accumulated in store in the Antipodes, is typical. After the War it was quite impossible for Australia to swing her trade back immediately into its old European market. Apart altogether from the stocks which had to be liquidated, new markets could not immediately be found, and so long as Russia and Central Europe are not buying in a normal way,

countries such as Australia can only get back to a normal volume of trade by slow degrees. The War, again, necessarily made Australia, India, South America, and Japan more dependent upon their own resources for goods which were formerly imported ; and it is notorious that all over the world there has been a tendency for every country to endeavour to maintain the new home industries by means of tariffs. We discuss below what permanent effect, if any, this tendency may have upon future world trade. For the time being, however, it is an additional check upon the volume of the world's foreign commerce. Finally, as the Brussels Conference points out, the fact that foreign investments were lost or sold out has reduced the ability of Europe to demand goods of distant countries. Do these considerations mean that there will be a lasting tendency for the countries of the world to become self-sufficient ?

On the other hand, before the War the total of the world's trade was rapidly growing. Do the influences that caused this increase still persist ?

Any forecast of the future of British industry must depend on two things :

- (1) An opinion as to the future volume of the world's overseas commerce ; and
- (2) An opinion as to Great Britain's prospect of retaining a sufficient proportion of this world's foreign trade. This in its turn will be determined by the productive efficiency of British manufacturing industry, the condition of our ports, and the enterprise of the British business world.

These two topics—the future of the world's overseas trade and Great Britain's proportion thereof—form the theme of the remainder of this report.

CHAPTER VI

THE FUTURE OF THE WORLD'S TRADE

THE world's future international trade will be influenced by (1) the volume of exchange between existing commercial nations, (2) the rate of development of new countries, and (3) the rate of economic advancement of populous but backward races.

As regards the exchange between existing nations and the fear that they may tend to become self-supporting by means of tariffs, it must at the outset be recognised that past experience shows that there are very real limitations on such developments. It is, for example, worth recalling that when Germany was experiencing her most rapid industrial development under a tariff system her exchange of manufactured goods with Great Britain also rapidly increased, although, broadly speaking, the industries which were growing in Germany were those which were likewise developing in this country. In other words, it appears that increasing production tends to promote trade even between apparently competing nations. The question is, however, of more immediate importance in regard to countries such as India, Canada, and Australia, which are not now mainly manufacturing countries but would like to become so. In this connection there must be borne in mind the fact that trade is exchange. Great agricultural producers like Australia cannot find an outlet for their exporting industries unless they also import, and if an attempt is made to keep out the goods which might be sent in exchange there is bound to result a lack of equilibrium and a conflict of interest between different sections within the tariff. This

conflict of interest may be seen at work in the United States, where the Fordney tariff is producing the reaction which America's high tariff increases have always produced. The tariff tends to raise the price of manufactures, the wages of industrial workers, the cost of living, internal transport charges, etc. But the grower of produce for export cannot command higher prices, though he has to pay more for the things he buys. The result is agitation for a lower tariff, and sooner or later the pendulum swings back. To some extent the same factor is operating in Australia. One of the results of the high tariff passed three years ago was that certain English firms began to build works within the Australian tariff. But the high wages of industrial labour raised costs so much that in more than one case these projects have been abandoned. It is conceivable that a country which has no special facilities for manufacture, but ardently desires to build up a manufacturing population, might kill its export trade for the sake of its manufacturing industries. But there is no precedent of a country throwing away its natural advantages to this extent.¹

Moreover, it has always to be remembered that, while a protective tariff on a limited number of goods can benefit certain protected industries at the cost of high prices to consumers in the country, a general tariff will tend to raise all prices. As soon as the price level has risen all round in proportion, home costs will have risen in proportion to the tariff, and goods will be able to flow in over the tariff wall and compete on the same terms as before the tariff was imposed. This, on the whole, is the chief explanation of the fact that Great Britain, buying its food and raw material in the cheapest market, and therefore keeping its cost of production relatively low, has been able during the last fifty years steadily to increase the total of its trade with protected countries.

The second consideration is the extent of the un-

¹ It is true that Australia, Canada, Argentina, and other countries show an increasing percentage of industrial population, but it has to be remembered that a large number of the industries of these countries are ancillary to the production of food and raw material, meat-canning, slaughtering, milling, etc.

developed territory of the world which will maintain an agricultural population and, for some time to come at all events, live by exchange. The extent of these land resources, particularly in the British Empire, can be seen from the following figures :

Country.	Area (Sq. Miles).	Population (Thousands).	Population per Square Mile.
Great Britain . . .	89,047	42,917	482·0
Western Europe . . .	2,823,191	342,022	121·1
Russia in Europe . . .	2,188,990	102,489	46·8
Russia in Asia . . .	6,323,480	33,675	5·3
India	1,805,332	318,942	176·5
China	4,277,170	436,095	102·0
Canada	3,603,336	8,788	2·4
S. Africa	473,089	6,929	14·6
Australia	2,974,581	5,436	1·8
New Zealand	103,568	1,219	11·7
U.S.A.	2,973,774	105,711	35·5
Brazil	3,275,510	30,636	9·3
Argentina	1,153,119	8,699	7·5
Rest of South America .	2,368,000	21,907	9·3
Japan	260,738	76,988	295·3
Egypt	12,023*	12,751	1061·0

* Settled area only.

Emigration to America has latterly been artificially checked, and restrictions have also been imposed by other countries, but the movement is still very considerable. The impoverishment of Europe and the consequent reduction of buying power following the War have meant very meagre profits on most forms of agricultural production, and have therefore discouraged development, but conscious efforts are being made by countries of the British Empire and by South America to stimulate and encourage settlement, and it may well be that in the next phase of world trade conditions may once more become favourable to the rapid opening up of new agricultural regions.

There remains the question whether the productivity and consumption of economically backward races—principally Russia and eastern Asia—will increase in the near future. Any statistics available need so many qualifications as to be misleading, but it is certain that

the standard both of production and consumption is very much lower in Russia, Japan, China, India, and Asia generally—countries with some 1000 million inhabitants—than among the 300 millions of industrial Europe, who themselves consume less per head than the 140 millions of the United States, Canada, or Australia. A relatively small increase among the vast Eastern populations in the production and consequent exchange of goods would result in a relatively great increase in the world's sea-borne commerce. The potentialities are of enormous scope ; what are the prospects of development in this direction ?

China alone has a population usually estimated at about 400 millions. While a considerable and early increase in the standard of the whole is immediately unobtainable, an increase of the population in touch with foreign trade is a practical question, in that it depends on an extension of the means of communication (see memorandum of Jeans on the "Iron and Steel Trades," p. 256). Railway construction has been virtually at a standstill since 1913, as the distracted politics of the country have made it impossible to finance it with foreign capital. But all the Chinese are agreed as to the need for railway developments, and these will be facilitated, as soon as the political situation allows, by the agreement between England, France, America, and Japan. The new President, Tsaokun, is in favour of action on these lines.

There is another field for trade expansion in China in electrical and hydraulic machinery. The tendency of coastal and river ports, besides certain inland cities, to set up waterworks and electrical supply undertakings appears to be undiminished by the state of the country. It is evident that there is and will be keen competition in this important sphere. The electrical industry in China has made much progress during the last three years. The total number of supply undertakings, 168 at the end of 1920, is now well over 200, and there is unquestionably ample scope for enterprise in this direction.¹

¹ A full and clear exposition of the possibilities of increased trade in cotton goods and other imports may be obtained from the report of the Commercial Secretary at Shanghai (lately published

It is probable that there will be an earlier improvement in the standard of living of the 300 millions of India, the 130 millions of Russia, and the 60 millions of Japan.

Considerations such as these point to the probability, not only that the world's total material productivity will continue to increase in the twentieth century as it did in the nineteenth, but also that this increase will involve a corresponding expansion of international trade.

The answer to the question what proportion of world trade Great Britain will be able to retain in the future depends on a number of considerations, which may be briefly dealt with under the three heads of Physical and Technical Considerations, Labour Considerations, and Financial Considerations. Before, however, we enter on this discussion we may observe in passing that up to the present there appears to be no evidence that Great Britain is losing her hold on international commerce. It may perhaps be said that in the few years since the War conditions have been abnormal, and we have not yet had to face the full force of international competition. America has recently been entirely absorbed in her own most remarkable internal prosperity and development, while Germany has not yet got to the stage of expanding her exports on a large scale as payment of reparations. But, on the other hand, we have been faced with the handicap imposed by hostile tariffs, and the competition of Continental producers selling at artificially low prices as the result of depreciated exchanges. What the balance of these opposing influences may be it is difficult to say, but the fact remains that up to the present Great Britain has, if anything, increased rather than diminished her share of world trade. It is true that the total of world trade has

by H.M. Stationery Office, price 1s. 7d. post free). Moreover, on p. 20 of this report the magnitude of the demand for electricity in Shanghai is shown in comparison with that for English provincial towns. P. 27 of the same shows the extent of the import of silver, an indication of China's potential buying power, and Mr. Brett, on p. 34, after noting the adverse factors of the moment, tells us that "in spite of the present stagnation in business, those whose interests are most closely bound up with the trade of this country have no lack of confidence in China's future."

been reduced by the War, but of the world's total exports, as Mr. McKenna recently pointed out, Great Britain is responsible for 17 per cent as against 13 per cent before the War. A similar story is told by the statistics of the world's shipping. Very great efforts have been made, not only by America but by European countries, to build up their merchant navies at the cost, if necessary, of their taxpayers, and if we look merely at the ships in existence, those of British nationality are a smaller proportion of the total than before the War. Nevertheless, when we examine key figures, such as the shipping passing through the Suez Canal, we find that, whereas before the War 58 per cent of the shipping passing through flew the British flag, in 1919 the percentage had risen to 61 per cent, in 1920 to 62 per cent, and in 1922 to 63 per cent. It is obvious, therefore, that we have not yet lost our hold. The question remains whether the omens are in favour of our retaining our present position.

CHAPTER VII

GREAT BRITAIN'S SHARE

(A) Physical and Technical Considerations

THE most fundamental and abiding source of our economic strength is the geographical position of this country. The European continent contains far the greater part of the world's white population. The British Isles lie opposite the ports from which the river highways lead into the interior of the Continent, and the ports of the Baltic Sea, which affords access to Northern Russia, Poland, and Scandinavia. These isles are the centre of the land hemisphere of the world, and our exceptional assets in the way of harbours are the natural focus of the greater part of the world's trade routes. It will be no easy matter to challenge our predominance in world shipping.

It is sometimes thought that the exhaustion of our coal supplies is undermining our position. There is no real ground for this fear. The duration of our coal resources is a matter of centuries, not of decades. The estimate of our known coal resources, owing to new discoveries, is as large to-day as in the 'seventies, when this fear was first raised, and although the process of exhaustion is always going on in particular areas, if we look at our coal industry as a whole, the rule of diminishing returns is operating very slowly. The fact that Great Britain does not possess substantial oil resources may temporarily reduce to some extent the value of the coal in our exporting districts. But, on a very long view, the world's coal will long outlast its oil resources. In the immediate future, however, it may be a handicap if we find that ships can be more economically run

by oil than by coal, unless some means is found of converting coal into a more suitable form of fuel. The duration of our iron ore resources is less assured, but for some decades we have been dependent upon imported ore. Iron ore is very widely distributed throughout the world. If, as is often the case, fuel resources are not readily accessible, the best ores will continue to be exported. Great Britain, with her coal fortunately placed close to the sea-board, will always be in a favourable position to bid for whatever ores are on the high seas. In this connection it is an interesting fact that in both America and Germany the land-borne ores, which are carried to the coal fields of those countries, are on the whole of considerably lower grade than the bulk of the world's sea-borne ores.

When we turn from these more remote speculations to actual facts, we find that in the iron and steel industry we have very nearly recovered our pre-War level of exports, a fact the more notable in that, on the other side of the account, we have recently imported much less steel from the Continent than before the War. As regards the coal industry, however, though here also the pre-War level of exports is almost reached, Mr. Thorneycroft gives a very suggestive analysis, showing that had it not been for the need of France and Germany these exports would have fallen off, for the reasons given in his paper. He adds, moreover, as additional handicaps the Seven Hours Act—difficult though this would be to repeal even if it were regarded as desirable to do so—and the emigration of some of our best workers. For all these reasons we cannot take a view of unqualified optimism with regard to the future of our coal exports. As regards the iron and steel trades, Mr. Jeans shows that the new alignments of Europe are unlikely to prove disadvantageous to England, and that our hold on those markets of Europe which are not more accessible to Germany than to ourselves has been strengthened. We hold a premier position in Empire trade in these lines. Japanese competition is not serious, and the fact that Australia and India are both such vast markets reduces any fear we may have of losing our export trade with them

through the competition of native industries. In general, the difficulties of new areas in becoming self-supporting in iron and steel are great. We are holding our own in the South American markets for reasons which are not likely to change soon, and in the tin-plate trade our progress has been relative as well as absolute.

In shipbuilding the outlook for the immediate future is by no means bright. It is influenced more than in any other single industry by the policy of disarmament. Moreover, the submarine campaign during the War necessitated a vast shipbuilding scheme in America, and led, in this way, to a considerable over-supply of ships of certain classes. Until the existing excess disappears it will act as a drag upon the shipbuilding industry. Other countries have also laid down ambitious schemes of development, in particular Japan and France. For temporary reasons, France appears to be enjoying a considerable degree of success, in competition with ourselves, in the shipbuilding trade. But Professor Jones remains optimistic. He concludes that we need not attach much importance to the mushroom growth of the industry in America and elsewhere; that "there appears to be no evidence that the old-time qualities of British design and workmanship have suffered in comparison with those of our competitors"; "that a return to the pre-War normal may be expected in about two years, and that for some years afterwards we may hope to build at least one-half of the world's annual addition to ocean tonnage."

When we turn to other industries, physical conditions play a less important part. Lancashire's climate is usually claimed as one of the factors which enable us to retain predominance in the cotton trade. There is a difference of opinion as to whether the characteristics of the Lancashire climate can be artificially reproduced and, so far as that factor has weight, we find it difficult to draw a definite conclusion. But the economic conditions which have maintained Lancashire's leading industry are still operative, and there is no reason to fear that change, if it occurs at all, will occur rapidly. The trouble about Lancashire

is an economic one. The paper on this subject by Professor Daniels brings out the point that, so far as can be seen, the demand for cotton goods, particularly in the Asiatic markets which are so vital to this country, is sensitive to price changes. When prices rise the demand falls off, partly through lack of purchasing power and to a less extent through the substitution of woollen for cotton goods. Indeed it is suggested that the power of Asiatic markets to purchase cotton can be roughly gauged by the rise in the money incomes of Asiatic nations, due to the fall in the value of money; the argument being that there has been no increase in the real income of Asiatic peoples compared with pre-War conditions. In other words, if cotton prices were from 60 to 80 per cent above pre-War prices, *i.e.* had risen about as much as commodities in general, there would be something like a pre-War consumption. In point of fact the rise in the price of cotton goods is much greater than this on account of the shortage of raw cotton. On this analysis the problem of raw material is at the root of the difficulty for Lancashire. It is, however, gratifying to find that of such trade as is available Great Britain is retaining her full percentage, and there is no sign that on the technical side Lancashire is losing ground. It may be added that the part of the trade engaged in fine spinning is already doing very well, that the artificial silk industry may perhaps produce a new opening, and that at the time of writing, even in the regular lines of Lancashire trade, there is some sign of recovery in the market.

By contrast with cotton it would seem that the world's demand for woollen goods is large and not readily reduced. The Yorkshire textile trade has often been compared unfavourably with that of Lancashire on technical grounds, and criticised for the absence of standardisation. But the West Riding has always shown remarkable adaptability in changing the character of its products to suit varying economic conditions, and Mr. Shimmin records as a favourable factor the readiness with which the trade took advantage of the renewed demand that arose in 1922 and 1923. From the competitive point of view we cannot see

that there has been any change in our relative position as a result of the War.

One other point calls for special mention. The question was raised whether the ports of this country and their equipment for handling goods were adequate to deal with an appreciably larger volume of trade than that of 1913, if and when such an increase should take place. We therefore invited some special inquiries in this connection, and the conclusions are set out in a paper by Mr. Clement Jones. These conclusions are on the whole optimistic, and are perhaps a sufficient answer to the criticisms which have recently been urged against British ports in several foreign quarters, and discussed at the recent International Conference of Shippers in London. It is, however, axiomatic that for Great Britain the state of its ports is one of the very first of national interests, and if development requires to be artificially stimulated, this port equipment would have perhaps the first claim.

There remains the question of agriculture, and in this connection it is difficult to avoid the conclusion—judging from the increase in production of various countries in the last decade—that we are falling relatively behind. Many new areas are being opened up in which cereals, at all events, can be produced at much less labour cost than in Great Britain; and it will only be possible to maintain even our present output by a rapid adjustment of farming methods to increasing world competition. There is some reason for thinking that all over the world cereal production, for the moment, at all events, has outrun the demand, and even if this is putting the case too strongly, Sir A. D. Hall's paper shows convincingly that there is no possibility of supporting an increasing number of workers at a reasonable standard of living in general farming in this country. On the other hand, in the present period of cheap cereals it is quite natural that English farming should be directed to the production of meat, dairy products, and vegetables, which cannot, like grain, be cheaply transported and preserved without deterioration.

We cannot here enter at length into the questions of

industrial technique ; but we believe there is no reason to think that we have fallen behind in equipment and scientific advance as a result of the War. Mr. Thorneycroft, in his paper on "Coal," suggests nothing which contradicts this view, and shows that the circumstances of the War led to improvements in the equipment of the mines. Again, Mr. Jeans shows, in his paper on "Iron and Steel," that there has been a 50 per cent increase in this country's capacity for steel output as the result of the capital put into the industry during the War. Unfortunately there has not been a corresponding increase in the capacity for the production of pig-iron, though for the time being the difficulty has been met by the use of much larger quantities of scrap. In tin-plates the technical equipment has kept pace with the advance of the industry as a whole.

In addition to the question of plant and machinery, the efficiency of industry largely depends upon methods of organisation. Factory management and lay-out, specialisation processes, improved administrative organisation, and many other aspects of the task which falls to the lot of the employer have made great strides in recent years. We find it, however, impossible to generalise effectively on this subject, still less to express an opinion as to whether we have gained or lost ground relatively to other countries.

In this connection we would point out that technical education has greatly improved in the last generation. There is undoubtedly room for its further expansion, but we have formed the opinion that, while it is impossible to stand still in this matter, or to have too much technical education, it would not be fair to say that we suffer industrially from insufficient facilities for it. Our chief need, perhaps, in this connection is that existing facilities should be adequately used. In the past this country may have suffered from the traditionally conservative attitude of a large number of British business people ; but the revolutionary effects of the War in disturbing old ideas and the keenness of modern competition have undoubtedly hastened a change of attitude towards technical education in British industry.

(B) Labour Considerations

Natural assets, and even equipment and technique as efficient as those of our competitors, will not avail us if in the future we put too high a price upon our goods and services, and endeavour to exchange these in the world market for food and raw materials on terms that are too favourable to ourselves. In other words, we can only hope to enlarge our trade if we are content with a low rate of profit per unit of production, and can reduce labour cost to at least as low a figure as our competitors. This does not mean that earnings must necessarily be low, but it does mean that there must be as large a production as possible for every £1 of wages paid. That is the first essential of future industrial prosperity. A decrease of cost through increased efficiency of labour and of production generally has been shown by the experience of the last three years to be vital to the country. The necessity has been felt first by the export trades, which have been compelled to bring prices down to the world level ; but it is equally a necessity for every trade in the country. Trades not directly engaged in export are nevertheless responsible for many elements in the cost of exports—the wages of municipal workers influence the level of local rates, railway wages and management influence transport charges, building wages and methods affect factory costs, and so on. All these enter indirectly into the cost of our exports. Moreover, such items as these obviously affect the real value of the wages earned by workers in export trades. There can be no harmony in social conditions if there is not a suitable relation between the wages of all wage-earning groups in the country.

Let us briefly consider the situation in these respects. In the first place, as regards the efficiency of labour there are no general statistics available. Since the War there has been a very considerable reduction in hours of labour, but in very few instances was there any reduction of earnings at the time the change was made. In the coal trade output per head per shift has not recovered to the old level, but

the output is not down in proportion to the fall in hours. In the steel trade generalisation is difficult, owing to technical changes, and this holds good generally of machine-using industries—which constitute most of the trades of the country. As regards these, the following statements which have been made by a large employer are probably broadly true. (1) The machine-minder has very little control over his output. In most trades there has been a very substantial increase in the output of the machine since 1913, owing to technical advance. (2) In cases where the physical or mental powers of the worker materially affect his output, the volume of output is largely determined by the form of wage payment. Time workers may have increased their output per hour to some extent, but they have not made up for the hours lost. Piece-workers have in most cases fully made good or more than made good the reduction in hours. In all cases the improvement in output has mostly occurred since the depression of trade set in, the output in 1919 and 1920 having been very low in most cases.

But, as we have said, the pressure of circumstances has first fallen on the export industries, or home trades subject to foreign competition. There has been very much slower improvement in what have recently been described as the "sheltered trades," and the discrepancy between earnings in the two classes has been one of the most serious difficulties of the last three years. In the first group, the large increase in labour-saving machinery, and the abundance of capital found by the Government during the War to purchase new plants, resulted in an abnormal advance in scientific production, at any rate for such products as were then required. In building, in transport, and in the whole mass of labour engaged in employments which constitute what may be called our national overhead charges there has been a tendency to maintain a higher standard of life than in other industries less fortunately placed. It would not be untrue to say that the methods by which the selling price of any of the products of these two groups is obtained are entirely different. The exporting group must in the end,

when proper adjustments have been made for difference in quality, sell its products at the world price. The other great group, immune from foreign competition, starts the calculation at the other end. It first calculates what it considers a fair rate for labour, with no international check whatsoever on the efficiency of the labour, and to this figure are added the cost of raw materials, administrative charges, and profits. The natural result is an obviously undesirable difference in the standard of life between workmen performing operations of precisely the same type in the two great groups into which we have divided British industry.

The effect of "shelter" may be seen in its extreme form in Government employment and on the railways. Generally speaking, the absence of power on the part of national factories and great State or railway enterprises to enforce payment by results, or by any form of measured output per man, is notorious, and this makes it more difficult for factories subject to competition to maintain their high standard of efficiency. At Woolwich Arsenal the authorities refused unconditionally to entertain any comprehensive scheme of payment by results, and any attempt seriously to reduce the cost of work done in the great railway engineering workshops would result in the management of the railways being confronted, not with a departmental strike but, by reason of the comprehensive nature of the railway unions, an entire stoppage over the whole railway. Can one wonder if the managements of these great semi-national enterprises, obsessed with the idea of maintaining their services at all costs, look coldly upon any improvement in efficiency in what they regard as a minor branch of their business, if such improvement will involve them in a labour dispute of enormous dimensions? When to this is added the fact, denied on all sides but obviously true in substance, that the dividends to the railway shareholders are to be practically guaranteed, there is built up a fortress within which inefficiency is encouraged. Such considerations enable one section of the community artificially to maintain a high standard of life at the cost of the remainder, thus creating jealousies and grounds for discontent as between worker

and worker, and adding to the difficulties of the country as a whole.

This disparity remains a source of controversy ; but the extreme differences have fortunately been diminished since 1922 by the recovery of the export trades. In some recent disputes, however, there have been indications of a tendency to exploit monopolistic powers to the full. It is of the utmost importance that there should be a better understanding of the economic unity of the whole wages system, and of the fact that in the long run it is the earning powers of the export trades that will determine the standard of living of the country as a whole. We do not mean by this to imply that any group of wage-earners should be satisfied so long as its wages are merely equal to those of the export trades. Indeed, the pressure for higher wages, in which the so-called sheltered trades may properly play a leading part, is a potent force, tending to improve the processes of industry in general. But when a higher standard is due to monopolistic influences—whether the result of trade combines, legal enactment, or the action of trade unions—it becomes harmful and a national burden.

In this connection the question arises whether it is sound for so many trades to base their wage agreements on a cost of living index number, and by its means to endeavour to fix as a permanency the 1913 standard of living. This question is discussed more fully in a later memorandum. But the assumption that Great Britain can permanently maintain the pre-War standard cannot be taken for granted, and if the national production is insufficient to maintain it, this method of fixing wages is merely a means of maintaining the standard of one class of workers at the expense of another. The considerations, however, which we have advanced in previous chapters, lead us to take a fairly hopeful view of our future national production, provided always that throughout industry workpeople will give the fullest possible value for wages. If they do, it is far too soon to abandon the fight to retain and even to improve upon the conditions of 1913.

But will such value be freely given ? In this connection

British employers are sometimes disposed to look with envy at America or at Germany. In the former, with very different natural resources and with more standardised markets, the output per head is much higher than in Great Britain; but economic pressure is more freely exercised upon labour, the organisation of which is comparatively weak, largely because in America the men who with us would become leaders of labour rise much more rapidly out of their class. Moreover, the employers are able to divide the forces of labour by recruiting from a cosmopolitan labour supply. The British employer will never be able to adopt the motto *Divide et impera*. Nor will he ever be able to rely upon the barrack-trained sense of discipline characteristic of the German worker. If the full energies of the British worker are to be mobilised, his confidence must be won by removing causes of suspicion, by fair treatment, and by allaying his fear that by working hard he is spoiling his own hopes of future employment.

Much progress has been made in this direction. A new relationship between employers and employed was born during the War, and has been struggling to live through the worst slump in history. Misery makes strange bed-fellows, and under the whip of economic circumstances both sides have learned to understand each other's difficulties and to develop a spirit of toleration. But much may be done to further the process. We cannot fully cover this vast subject here; but a sound future policy should embrace the following points if the spirit of distrust and of ca' canny is to be exorcised.

In the forefront there must be security of livelihood in times of unemployment, without driving the workers to the shame of the Poor Law. This requires an overhauling of the system of Unemployment Insurance. The reforms needed—apart from those referred to in *The Third Winter of Unemployment*—include a more elastic system of benefits, combined with stricter administration.

The worker must be satisfied that he is getting the utmost his industry can reasonably afford to pay.¹ This

¹ This is the only question as between the workers and their

means frank disclosure of the facts about industry. In some cases it is practicable to table figures for a whole industry, as is being done to-day in the case of the coal trade.

In this connection Sir Peter Rylands, recently President of the Federation of British Industries, writes as follows in the *Economist* of March 29:

“ My advocacy of the principle (of giving information) was successful so far as the wire trade was concerned, and now for the past four years a considerable number of the leading firms have furnished such figures, which are audited by an independent accountant, and as a matter of interest I may say that in my agreement with the men they have been tabulated under the following heads :

- “ 1. Total capital estimated on the principles laid down by the Finance Acts.
- “ 2. Total wages, wages being defined as remuneration to all workers in the industry.
- “ 3. Salaries. This to include payment to all other employees in the industry, including directors.
- “ 4. (a) State and local taxation and payment under National Insurance Acts.
(b) Amounts of excess profits duty.
- “ 5. Amounts distributed amongst shareholders and debenture-holders, as interest upon capital.
- “ 6. Amount of taxed profit allocated to reserve and special depreciation.
- “ 7. Total amount paid for traffic purposes.
- “ 8. Aggregate tonnage sales output of the wire from factory.
- “ 9. Total coal consumption.
- “ 10. Units of electricity purchased.
- “ 11. Cubic feet of gas purchased for power purposes.
- “ 12. Total number of wage-earners as defined in Clause 2.”

Other industries would naturally adapt their state-

direct employers. But, as we have indicated in preceding paragraphs, the national economy requires that in the long run there must also be a suitable adjustment between the prices paid for goods and services produced by the sheltered and the unsheltered trades respectively.

ments to their respective conditions. The minimum requirements are that the figures should show gross produce of sales ; the wages bill ; the cost of material ; other charges and profits. In other cases where figures for a whole industry are unsuitable, figures for small sections may be summarised, while in others individual accounts may with advantage be disclosed to representatives of a firm's own staff or to trade union officials.

Clearly also the principle of frank dealing means that the State must be prepared to take action to examine and to reveal publicly any cases of exploitation by the abuse of monopolistic power. In any or all of these ways there is much progress to be made in the direction of convincing the worker that he is getting all the industry can afford and that some one else is not benefiting at his expense.

Thirdly, there is room to enlarge the scope and frequency of conference between employer and employed, and thus to assure the latter that they are normally taken into consultation, and that their collective opinion can influence the conditions under which they work.

We may perhaps add as a fourth consideration that employers and the well-to-do generally could do much to improve the industrial atmosphere if they would strive to encourage the revival of a spirit of thrift, and less extravagant living, by example rather than by precept.

There is no simple way to create " a new spirit in industry " and to remedy defects that are the result not of one but of many causes. But if distrust can be removed along the lines suggested, or by any other means, British industry will be able to face competition with confidence ; for we are satisfied that in technique, in general ability, and in his traditional industrial qualities the British workman has no need to fear the competition of any worker in the world.

(C) Financial and other Considerations

Certain financial factors which might help or hinder British trade remain to be briefly discussed ; these are,

first, the form and weight of taxation in Great Britain ; secondly, our arrangements for financing and providing capital for British industry ; and thirdly, the economic effect of exporting capital.

TAXATION.—The burden of taxation in proportion to the national income is probably heavier than in any country in the world. It is certainly much heavier than in America ; but it is not very much heavier than in France, and may become lighter than France's burden when she shoulders the full weight of her current expenditure, unless her budget is substantially relieved by large reparation payments from Germany. The principle of graduation, however, which applies to the greater part of our tax revenue—to a much higher proportion, in fact, than in any other leading country—enables us to produce a very large revenue with a minimum of disturbance to the natural trend of trade. A system of indirect taxation cannot avoid influencing the character of consumption and of production ; but a direct system, based on the taxation of surpluses, can have very little direct effect on prices or on the volume of production, since the production continues to the point at which there is no profit. In other words, the significant units of output which most influence price, viz. those whose cost equals their selling value, pay no tax.

Very heavy direct taxation may affect production indirectly (1) by swallowing up the surpluses of individuals from which savings would otherwise be made, and so limiting the increase of capital, (2) by inducing individuals to betake themselves and their capital to happier and less taxed lands, and (3) by diminishing the attractiveness of new and risky developments.¹ We cannot claim specially to have investigated these subjects, but we venture to hazard the opinion that, in spite of high Government expenditure,

¹ A man may be willing to risk his money in a new and rather speculative enterprise if he can see his money back in, say, ten years' time. But with present tax rates the period would be increased to, say, thirteen or fourteen years. The net return at high rates of profit may bear the same ratio as before to the yield of consols, but in such cases it is possible that the period of interest is the major consideration.

the capital of the country is probably increasing nearly as fast in money value as before the War, although it is not increasing as fast in real values when the rise of prices is taken into account ; that there is no sign that capitalists are leaving the country, and, generally speaking, no sign that this country has not sufficient capital available for its present needs.

In this connection it should be remembered that the disbursement of large funds in the form of interest on the National Debt is in the main a transfer of funds within the country, which tends to increase rather than to diminish the proportion of the nation's income which is " saved."

We would, however, urge that the tax system needs to be constantly studied from the point of view of its effect on capital, and in particular that inquiry should be made as to whether industries could be encouraged to " save " more if more liberal arrangements were made for exempting from taxation funds set aside for reserves—particularly in the case of industries with rapidly wasting assets. Inquiry is also needed as to the effect upon the cost of production of local rates, which bear much more heavily upon some trades than upon others. The social services chargeable on the rates amount to a very large sum, and it is open to doubt whether assessment upon present methods is the best way of distributing the burden, at all events as between one industry and another.

THE FINANCING OF INDUSTRY.—Allied to this question is that of the financial machinery for providing funds for industry. We do not feel competent to make any suggestion in this connection as to the general banking system of the country. But attention should undoubtedly be given to the question whether the regulations governing the floating of new issues really guarantee that the investor acts with knowledge and so makes the best use of his savings. It may be said that this is a case to which the doctrine *caveat emptor* applies, and that the individual concerned is the loser. But the matter is one in which a wider national interest is involved. Professor Pigou's estimate of the importance of this point is confirmed by

practical experience. We wish it were possible to say that a prohibition of "offers for sale" (which now render the provisions of the law relating to prospectuses void) would meet the case. But "offers for sale," when the flotations concerned are made by first-class houses, do disclose what is necessary and have certain technical advantages for all concerned. Thus all that can be said on this subject seems to be that, since the Government is responsible for past legislation which is no longer effective under modern conditions, and since some regulation of new issues exists in every financially civilised country, it is the immediate duty of Government to devise legislation which shall be effective to prevent what practical and theoretical considerations suggest to be not only the weakest part of our financial machinery, but an important source of loss to the community.

EXPORT OF CAPITAL.—There remains the question whether our industrial position is prejudiced by the freedom with which British capital is invested abroad. We see no substantial reason for believing that the export of capital amounts to a use of British capital to finance Britain's competitors. The abuses which do exist in this respect come under other heads. The unevenness of the flow of British capital abroad does sometimes dislocate certain home trades, but this is part of the trade cycle, correctives for which we have already dealt with as a whole. It may be that some of the investments made by investors here in foreign loans are foolish, but we cannot see how this is to be remedied, at all events so long as the law relating to what particulars must be published by those who appeal for fresh funds to the public remains, as we have said in the preceding paragraph, of little effect. Before it could be said that action was necessary to restrict foreign investment, the increased publicity and the establishment of trustworthy and trusted criteria, which we have urged in our discussion of the trade cycle as a whole, should have been achieved. If it be held that the high rates of interest offered by foreigners render it difficult to raise loans for housing and educational work at home, we can

only answer that in practice rates of interest here are controlled by bank rate, and that in the general financial policy for correcting the trade cycle which we have advocated in the first part of this introduction, room would be left for the Bank of England to meet, in the future as in the past, such emergencies as they arose. We have said that control of discount rates is an art, not a science; and if this view is accepted, the question of competition in interest rates may safely be left where it is. Control of the use to which capital lent abroad is put is no longer seriously suggested to be a means of controlling the development of foreign countries. Such control is not possible; and if it were, it would achieve nothing, for the borrower's internal capital would be set free for purposes of which the lender did not approve. The idea that the businesses in which the City adds forty millions a year to the national income by profits made out of foreigners, hinder by their competition the full financing of internal trade, is also obsolete, and there have been practical instances since the War of its futility. Mr. Hobson, in the paper printed in this volume, deals in detail with the economic effects of export of capital and with the difficulties and disadvantages which would in practice arise from an attempt to control it. We have given reasons for our own belief that the freedom of our capital market, which is from time to time a source of anxiety to certain classes, is not worth restricting, and we should add that various post-slump financial schemes, such as the Trade Facilities Act, give ample scope for any interference with the capital market which a Government could, in present circumstances, undertake with advantage to the community.

CHAPTER VIII

SUMMARY OF CONCLUSIONS

It is not easy to reach, much less to summarise, specific conclusions on a field so wide and so speculative as that covered in the preceding chapters. But it will doubtless assist the reader if we make the attempt.

Dimensions of the Problem

When trade is neither particularly good nor particularly bad, pre-War experience suggests that out of the total working population there will be $2\frac{1}{2}$ per cent of unemployed who will be taken into employment when trade reaches its zenith, and a further $2\frac{1}{2}$ per cent unemployed owing to seasonal causes, local movements of industry, changes in methods, and increasing age. We therefore consider 400,000 to 500,000 as a normal figure of unemployment. The surplus over this figure has fallen from 1,600,000 to 1,700,000 in 1921 to 500,000 to 600,000 at the present time.

The rate of increase in the employment-seeking population is less than is frequently supposed. The annual rate in the ensuing two decades respectively is likely to be, if emigration continues at the rate of the last two years, 90,000 males and 30,000 females up to 1931, and no females subsequently.

The Trade Cycle

The Trade Cycle in modern times is an international affair.

Great Britain, as the largest international trader, is

affected by variations from every quarter. On the other hand, the fact that our trade is so widespread produces an averaging effect and protects us from feeling the full violence of particular changes.

The post-War boom and slump are only to a limited extent comparable with ordinary trade cycles. The downward movement in 1920 started not as a result of a deliberately deflationist movement, but on account of the fact that the expansion could only have been financed by colossal inflation, and neither the Japanese, the American, nor the British Government—to take the order in which each faced the problem—was prepared to embark upon such a policy.

The subsequent depression and recovery have occurred without any active intervention either of the Government or the Bank of England in monetary policy—the floating debt which has been redeemed having been steadily replaced by trade credits.

An analysis of the Trade Cycle shows it to be due to a variety of complex causes. There is therefore no simple remedy, especially in a country so dependent as Great Britain on foreign commerce.

It is, however, generally agreed that the violence of upward price movements and consequently the severity of reaction might be checked by a more conscious use of the rate of discount by the Bank of England for this purpose. But the extent to which this can be done is limited by practical considerations. The policy involves checking trade prosperity when on the up-grade. It would need great confidence on the part of the business world and of workpeople to entrust anybody with so unpopular a task. There is also no agreement as to the criteria to be adopted in putting the policy into effect.

The cycle could undoubtedly be modified if there were more accurate and widespread knowledge of economic facts. Great Britain is far from being sufficiently equipped in this respect.

To some extent, it should be possible to fill in the depressions in private trade by suitable timing of public

capital expenditure. There are considerable practical difficulties in such a policy ; but they could be met if plans were taken in hand sufficiently in advance, and if it were realised that such a policy must be national, and must pay as much attention to restricting this kind of expenditure when private trade is good as to expanding it when private trade is bad.

The Future of British Trade

Unless we are to undergo a disastrous and impoverishing economic revolution, our country must remain dependent upon its foreign trade.

Our overseas trade in the future depends upon the volume of traffic that will sail the seas in the twentieth century, and the proportion of it that will be carried on by Great Britain.

We take an optimistic view of the future growth of the world's maritime trade. The attempt of many countries to make themselves self-contained by tariffs will probably not diminish at all the extent to which nations will live by the exchange of goods and services ; the filling up of the less densely peopled areas of the world will increase foreign trade, and the rise in the material standards of the poorer nations of the world will have the same effect.

Britain's share of world trade will depend on her natural resources, and on technique and the efficiency of production on the side both of management and of labour.

Our natural resources have not been affected by the War. Our coal resources as a whole are being exhausted extremely slowly—though coal as a competitive factor is for the time being threatened by the advantages of oil for many purposes. Nor has the War altered the balance of forces in the whole metallurgical group of trades. In agriculture, however, the changes resulting from the War have produced an extensive development of cereal supplies, which seems to involve a shifting in Great Britain to other than cereal farming.

It is peculiarly difficult to generalise about technique ; but the War has caused improvements to develop here

which we believe to be as rapid and as far-reaching as those of our competitors.

As regards labour, wage rates do not yet seem to be in equilibrium as between various trades. But behind this question lies the greater problem of securing the utmost efficiency of British labour. The full resources of our industrial population can only be called forth if full confidence is secured between workers and employers and if suspicion and fear and exploitation are removed. We have indicated a few features of industrial policy which may help to attain this end.

Taxation is very heavy ; but it is not a fatal handicap, provided the system is constantly watched with a view to easing the dislocation caused by heavy tax collection ; the present system of rating for local purposes is sometimes unjust to industry as compared with commerce.

We do not think that the country is prejudiced by freedom to export capital, or that a system of regulating investment is practical.

In short, the situation as regards employment has immensely improved in the last two years, and whether we look at the near future or further ahead we see no reason for taking a pessimistic view of Britain's possibilities. With our present economic system, some reserve of labour for various occupations is necessary, but we do not believe that the abnormal unemployment of the last few years will become chronic or is inevitable.

APPENDIX

MONETARY STATISTICS

THE first two columns in the following table show the surplus or deficit, quarter by quarter, of Government receipts in comparison with the expenditure. To this have been added the amounts collected under the excess profits duty, since it is sometimes argued that the large collection on this account was a serious factor in the twelve months following the turn of the tide in April 1920, as it reduced the funds available for financing industry in the most difficult period of the slump. Under the heading of Floating Debt the figures for Ways and Means Advances are not available until the second quarter of 1919. Under the heading of Banks have been given in detail for some years past the figures of the deposits of the Bank of England, but in the following table there have been separated out the figures of Other Deposits. This table gives some indication of the reserves held by the other banks of the country, but not an exact one, since this item includes other elements besides the banks' balances. As regards the deposits of the joint-stock banks, the monthly statement of the clearing banks has only been issued since the beginning of 1921, and does not cover the critical period of 1920. The ratio of cash reserves, on a different basis to that of the table (*i.e.* including as cash "balances with and cheques in course of collection on other banks in the United Kingdom"), can be ascertained for the whole period from the half-yearly balance-sheets. The ratio was 17·1 in December 1913, 17·1 in December 1918, 16·2 in June 1920, 15·5 in December 1920, and 16·9 in December 1923. "Window-dressing" is more pronounced in these figures than in the "average weekly balances" in the table. The legal tender of the country is given by a total of the two columns in the table, but the figures, of course, include the reserve of notes held by banks of all kinds, and do not only represent

the money in the hands of the public. As regards capital issues, a separate total has been given for the amounts of money raised on the London money market chiefly for British industry. The figure excludes Government borrowings and municipal borrowings (which included a considerable sum in 1920 and 1921 for housing), borrowings of foreign Governments, foreign corporations, and foreign enterprises of all kinds.

PART II
ECONOMIC MEMORANDA

CORRECTIVES OF THE TRADE CYCLE

A. C. PIGOU, M.A.

I

1. ANY attempt to understand fully the process of events that make up any particular trade cycle is baulked by lack of relevant statistics. We are familiar with the general notion of depression passing into revival, revival into boom, and boom again into depression, but we have no adequate information about what happens either to production in the aggregate, or to the consumption of different classes of people, or to the stocks of goods of various kinds stored up in shops and warehouses. For want of information on these and other vital matters we cannot test and control our analysis in the way that we should wish to do. We can make for ourselves a rough picture of a typical trade cycle ; and we know enough to be sure that this picture is not wildly out of drawing. But about the details and even about some of the broad lines there is, and, until the statistical data at our disposal are greatly improved, there must remain a distressingly large measure of uncertainty. This necessary insecurity of diagnosis makes difficult the task of prescription and treatment. We are moving in a half light, in which dogmatic assertion is out of place and a cautious and tentative spirit is alone appropriate.

2. On the surface the trade cycle appears as a movement of money prices and money profits. "Every business establishment is supposed to aim primarily at making money. When the prospect of profit improves, business

becomes more active. When the prospect grows darker, business becomes dull.”¹ The framework of modern industrial life being a monetary framework, this is inevitable. But it would be a gross fallacy to infer, as is sometimes done, that, because the trade cycle always presents itself in a money garment, therefore the forces that underlie its movement necessarily reside in the money system. Upon this matter we shall have to speak presently in some detail. For the moment, however, we are concerned, not with causation but with description. We do not ask how far and in what way the movement that takes place in things is caused by the working of our monetary arrangements, but what the movement that takes place in things in actual fact is. To make for ourselves, despite the deficiency in our data, a rough outline sketch of this is an essential prelude to any more searching inquiry.

3. At every moment of the working day workers by hand and brain, in association with the capital equipment available for them, are engaged in rendering some economic service. Some of them are taking part in the construction of capital goods, such as railways and ships, machinery, tools, and buildings: others are extracting raw material from the earth or looking after crops and animals on its surface: others are advancing some material on its way from the raw state nearer to the final form designed for it, as the makers of pig-iron or of cotton yarn: others are finishing consumable goods of various sorts, as the makers of clothes, bicycles, and so forth: others are transporting goods: others dealing with them in warehouses and shops: others operating such services as the provision of gas, water, and electricity: yet others rendering personal services to individuals and groups of individuals, *e.g.* doctors, lawyers, teachers, and servants. At the same time that all this is happening a stream of consumable goods, the final fruit of a substantial portion of this process, is always flowing into warehouses and shops,—institutions which we may regard, if we will, as a lake into which these things pass and in which they stay for a while. At

¹ Mitchell, *Business Cycles and Unemployment*, p. 6.

the opposite, or consumer's, end of this lake there is also always proceeding an outflow of consumable goods to the various persons who have claims on them. This outflow goes, in great part, to the controllers of business, who retain some of it for their own consumption, hand some over to the persons to whom they are under contract to pay interest on past loans, and hand over some to work-people in the form of wages to induce them to carry on further work. A smaller part of the outflow goes to Government authorities in the form of taxes and loans, to be handed over by them to various persons, partly against work and partly to finance pension schemes, insurance schemes, Poor Law relief, and so forth. Of course this account is only rough and approximate : for, though most of what are actually called consumable goods flow through warehouses and shops, the important division of them constituted by direct services does not do so ; while, of capital goods, those that are made to order go direct from producer to purchaser without any intermediary.

4. If the life of industry was steady and continuous, the rates of flow and the volume of all these various streams of things would always be the same ; or, more exactly, since the numbers of the population are not constant, they would change gradually in proportion as population changed. In the actual world, however, instead of this kind of constancy, we find that succession of wave-like movements which constitutes the trade cycle. As has already been indicated, existing statistics do not enable us to depict these wave-like movements at all adequately. One thing, however, is quite clear. The aggregate amount of work done, the volume of goods of all sorts that flow into the lake at the producer's end, and the volume of consumable goods that flow out of it at the consumer's end, all expand in the upward phase of the cycle, and all contract in the downward phase. It is, indeed, in these successive general expansions and general contractions that the trade cycle essentially consists.

5. Now, if this were all, that cycle would still be an interesting, but it would not necessarily be an evil, thing.

As between regular activity and rhythmical activity, there is, in the abstract, no particular reason to prefer one above the other. There is no ground for believing that the world would be a better place if, instead of being wholly awake in the day and wholly asleep at night, we were half awake all the time. There is no more reason, of a general abstract sort, for believing that it is worse for people to work for three or four years very hard and then for three or four years rather slackly than it would be for them to work moderately hard every year. The comparative advantages of the two plans would seem to turn on the physical and psychological constitution of human beings, and thus to be a medical rather than an economic issue. In actual life, however, the relations of the trade cycle to labour are of such a sort that its evil character cannot seriously be doubted. It is possible to imagine a world in which labour should be completely mobile between different occupations, and in which wage rates are so plastic that variations in the demand for labour are always associated with wage movements sufficient to allow everybody to be continuously employed. But in actual life wage rates are not plastic to this degree. Consequently, even though the assumption of perfect mobility between different places and occupations is still supposed to be valid, a fluctuating demand for labour must always be associated in the downward phase with a certain amount of unemployment ; and, moreover, the aggregate volume of employment over good and bad times taken together must be less than it would be if the demand did not fluctuate. When the assumption of perfect mobility, as well as the assumption that wage rates are perfectly plastic, is removed, still more serious effects on the aggregate volume of employment are revealed. For the trade cycle, as we know it, involves, not merely an *absolute* oscillation in the demand for labour in all industries collectively, but also a *relative* oscillation as between different industries. Thus, in periods of depression the contraction of demand is much larger in the engineering, shipbuilding, and other constructive industries than it is in industries devoted to the

manufacture of consumable goods. This fact, coupled with the fact that workpeople cannot move freely from one occupation to another, causes reserves, or pools, of labour to accumulate round the fluctuating occupations, sufficient to meet their needs in good times and, therefore, more than sufficient to meet them in bad times. Apart from the fluctuations there would have been no need for these reserves, and the men who formed them could have been trained to, and, presumably, employed in, some other avocation. Thus, the trade cycle does not merely mean that, say, 2 per cent of the workpeople are unemployed at one time and 10 per cent at another, instead of 6 per cent always: it means that the aggregate amount of unemployment over bad times and good times taken together is much greater than it would be if the cycle were eliminated. There is no need to offer formal proof that this is a grave social evil.

II

1. It is not the purpose of this paper to investigate the causes of the trade cycles. The problem is an enormous one and quite unsuitable for summary discussion. It is, however, impossible to say anything about remedies without some reference to causation. Consequently, in the following section an attempt will be made to disentangle and to exhibit in rough outline some of the principal factors that help to bring these cyclical movements about.

2. Many years ago Jevons drew attention to the important results which abnormally bad and abnormally good harvests produce on industrial activity. A bad harvest, by lessening the buying power of agriculturists—we assume that the demand for agricultural produce, as a whole, is fairly elastic—necessarily restricts the demand for the products of industry, and so reduces its activity. A good harvest has the opposite effect. There is some evidence that harvest variations are periodic, and, though there is much dispute as to what their period is, a number of writers have endeavoured to trace a connection between

it and the period of the trade cycle. It may well be that some connection exists. But, if it does, it is probable that harvest variations exercise their influence in the main, not directly, but indirectly, by stimulating or depressing the spirits of business men. In the modern world the proportional part played by agriculture is not large enough, and the scale of harvest variations in the aggregate is not sufficiently wide, to allow of their direct influence through demand being very great.

3. Harvests are not, of course, the only "accidental" fact by which the activity of industry is liable to be affected. There are also human inventions, the discovery of new mineral deposits, outbreaks of war, and many other things. Dominant over all these, however, so far, at all events, as the rhythmic wave-like movements of the typical trade cycle are concerned, is the state of mind of the leaders of industry and commerce. The attitude of these persons towards the signs of the times does not remain constant, but varies from period to period between errors of optimism and errors of pessimism. In good times they become over-confident, exaggerate their prospects, and expand their investments further than a true forecast of their profitability would warrant. After a while, when the goods, for the production of which they have made preparations, are ready for the market, they find that the demand for them is less than they had looked for; they suffer losses, and these losses react on their state of mind, causing them now to underestimate the prospects of investment, just as previously they had overestimated them. If the minds of different business men moved independently of one another, their several movements would, indeed, tend to cancel out, and, though the different parts of industry might vary a good deal relatively to one another, industry in the aggregate would not vary much. As a matter of fact, however, the states of mind of different business men do not move independently: the swing from the one sort of error to the other is a common general swing—a sort of crowd movement. The reason for this is partly that states of mind are infectious, and that the people

who control business live close together in cities : partly that, in the modern world, different business concerns are bound together by a network of orders and of credit relations. On account of these things, moods of optimistic error and, subsequently, moods of pessimistic error tend to move in single waves over wide areas, thus bringing about those large changes in industrial activity generally which characterise modern trade cycles. Of course, these changes in mental attitude are not autonomous and wholly disconnected from movements in the external world. A good harvest, as has already been hinted, may sow the seeds of optimistic error or stimulate them to more luxuriant growth ; conversely, a bad harvest may cause the tide of men's thoughts to set towards pessimism earlier than it would otherwise have done. But, though they may be affected by outside events, excessive optimism and excessive pessimism in business have an inherent tendency to engender one another, and, therefore, a natural rhythm. The reason, of course, is that when people invest too much in industry, the fact that they have done this is only revealed to them after an interval long enough to allow the products that they have been arranging to manufacture actually to come to market, and that when, thereafter, they invest too little, this mistake also, like the previous one, is only revealed after a corresponding interval.

4. In what has been said, it has been tacitly assumed that wave movements in business confidence can take place independently of the monetary and banking arrangements that prevail. This is sometimes denied. What, after all, it is asked, do business optimism and business pessimism essentially mean ? Business optimism means an expectation that prices are going to rise or to go on rising : business pessimism an expectation that they are going to fall or to go on falling. If, therefore, monetary and banking arrangements were so contrived as to keep prices steady, fluctuations in business confidence could not take place. These ought, it is said, to be regarded, not as independent causes of the trade cycle, but merely as one of the channels

through which the defects of our existing monetary and banking systems make their influence felt. There is, however, a fallacy in the above reasoning. In a period of optimism a representative business man may, indeed, expect in a vague way that the prices of all commodities are going to rise ; but the thing that affects his action is the expectation that the price of his own particular commodity is going to rise. A knowledge that the *general level of prices* must remain stable—and this is the utmost that any monetary or banking arrangements could secure—will not prevent him from entertaining this expectation. *Every* business man may quite consistently believe *both* that the general level of prices is going to remain constant *and* that the price of the thing he himself has to sell will go up. It is impossible, of course, for *all* business men rightly to hold both these opinions, and if they do all hold both of them, there must be error somewhere. But the meaning of excessive optimism is that there is error somewhere ; and exactly the same thing is true of excessive pessimism. It may be—and indeed it certainly is—the fact that the monetary and banking arrangements current at the present time cause errors of optimism and errors of pessimism to be larger than they would be in a regime of stabilised general prices : because, when general prices are rising, the ordinary man, while seeing clearly the benefit to himself that will result from the rise in his own things, does not attend so closely to the harm to himself that will result from the rise in other things ; and similarly when general prices are falling. But to grant this is not to grant that errors of optimism and of pessimism are merely monetary phenomena. In a world of pure barter they would still exist : A and B each making at the same time now an exaggerated, now an inadequate estimate of the other's prospective real demand for his stuff. No study of trade cycles can be adequate in which this point is misunderstood.

5. Though, however, monetary and banking arrangements do not play that overruling part in the causation of these cycles which is sometimes assigned to them, they do play a very important part. When, for any reason,

valid or otherwise, business confidence is enhanced, business men become more anxious than before to undertake the manufacture of goods and to secure industrial equipment. This means fundamentally that their desire for things and for the services of labour expands relatively to their desire for money and bank balances. It means, to put the same thing in a more superficial, but more concrete, form, that they are inclined both to turn over their money and bank balances more quickly, and to increase the amount of their money and balances by seeking further accommodation from bankers. In the western world the consequences of this are that a larger proportion than before of existing monetary purchasing power (including bank balances) is put on offer against goods and services, and also that a larger stock of monetary purchasing power is created in the form of bank loans. These changes necessarily involve an upward movement in general prices. In the course of this the prices of different things are not all affected equally at the same instant, but in successive stages. When, for any reason, business confidence is contracted, the opposite results follow. These movements on the side of money, though themselves, in the first instance, effects of movements that have taken place, independently of them, in business confidence, have in turn important reflex influences upon the conduct of the business community. In examining them it is convenient to ask, first, how things would work out if the price movement were uniform and simultaneous all along the line, and, secondly, what further consequences follow from the fact that it is not thus uniform and simultaneous.

6. When business men, moved by optimism, decide to spend a larger proportion of their balances in hiring workmen to make for them manufactured goods and industrial equipment, what they do, in effect, is to give to shopkeepers more of their money in return for goods of the kind on which workpeople spend their wages. In consequence, shopkeepers put up the prices of these goods and sell rather less of them to persons in receipt of fixed incomes, and also, in spite of this, for the time being find

their own stocks of them somewhat reduced. The business community has thus secured the extra stuff that it needs for paying wages partly by depleting shopkeepers' stocks and partly by forcing the owners of fixed incomes to content themselves with smaller purchases. These effects would take place in some measure even though no addition were made to the net volume of bank balances. Since, in fact, business men, besides spending a larger proportion of their balances, also increase their borrowings from bankers so as to augment those balances, the scale of the effects is enhanced : and the larger is the increase in the balances, the more it is enhanced. Let us leave out of account the reactions upon shopkeepers' stocks. This is an obscure matter, upon which it may be hoped that statistical research will presently throw fuller light. With our present imperfect knowledge, it is not adapted for study in an elementary discussion of this character. Apart from this, what happens is exactly the same as what would happen if, the general level of prices being kept constant, a tax were imposed on the owners of fixed money incomes and the proceeds handed over as a sort of bounty to the business community.

7. The levy that is thus, in effect, made in their interest reacts on industrial activity in four ways. First, having more real resources at their command, business men are enabled to expand their activities further and to offer a larger demand for labour than they could do otherwise. Secondly, being rendered through the levy really more prosperous, they are encouraged to look more unreservedly on the sunny side of doubt, so that the tendency to overestimate the profitableness of investments, from which they are already suffering, is increased. This makes them desirous of spending still more of their resources in setting labour to work. Thirdly, in so far as the upward movement of prices is a continuing one, business men may rightly expect that lenders of money will realise the situation less clearly than they do themselves, and will not increase the price of money to the full extent needed to offset its fall in value. Hence, business men may reckon to obtain an

advantage in respect of new loans as well as in respect of those that they have already contracted. Lastly, rates of money wages are sticky and slow to move. Workpeople will not at once insist on an increase in wages proportionate to the increase in the prices of the things they buy : and, therefore, will offer a given quantity of service at a lower real price than they have been asking hitherto. In these several ways the monetary reactions, to which business optimism leads, augment at once business men's fortunes and their tendency to optimism ; with the result that industrial activity is expanded further than it would be in like conditions under a system of stabilised general prices. The whole of this analysis is applicable, with a simple reversal of terms, to business pessimism.

8. The above analysis would be complete if the price movement due to a speedier turn-over and an increased volume of bank balances spread itself instantaneously over the whole of industry. The fact that in real life it does not do this causes the reactions which are set up to be larger than they would be if it did do this. The reason is as follows. Under a system of stabilised prices, when business men wanted more real resources to invest in setting labour to work, they could only get them by offering a higher rate of real interest so as to induce the owners of fixed incomes voluntarily to surrender a part of them. They would obtain the extra cash they wanted in order to pay their workpeople in return for promises to lenders, and there would be no further reaction of any sort. To put the same thing otherwise : prices would not change, but the workpeople would have money to spend which the owners of fixed incomes would otherwise have spent : and this change in the distribution of spending power would be the only change. In actual life, however, the workpeople get the extra money wages *before* prices have risen, or, at all events, before they have risen so far as the new causes set in play must ultimately make them rise. Therefore, when they spend their wages, they improve the fortune of the people who sell the goods they buy, and cause more orders to be given to the people who manufacture these goods. This makes these

people in turn anxious to increase their output, and, to that end, to turn over their balances more quickly and to increase the volume of their balances. Thus the wave of prosperity, and, with it, a wave of optimism, spreads out from its original point of impact along with the outward rolling of the price wave ; and in turn reacts to make that wave itself mount higher. These reactions from the process of the price movement are more obscure and less fully understood than the reactions from the fact of this movement (and its underlying causes) that were studied in the preceding paragraphs. It is neither practicable nor necessary to examine them in detail here. Unless, however, some reference is made to them, our analysis would have an appearance of simplicity out of keeping with the complex conditions of real life.

9. We have then, in rough summary, this result. Even in a community in which the level of general prices was stabilised there would be some tendency towards the occurrence of trade cycles, due, in the main, to a rhythmical recurrence of errors of optimism and errors of pessimism among business men, the interval between the two sorts of error being partly dependent on the time that it takes for business ventures to yield their fruit and partly upon the intervention of specially good or bad harvests or other external accidents. In the actual world, where the general level of prices is not stabilised, the processes set up on the side of money and banking by upward and downward movements in business confidence react in a powerful way both to enhance these movements of business confidence and also, apart from that, through bounties to business men in good times and imposts upon them in bad times, to enlarge the scale of industrial fluctuations. On the basis of this analysis I shall proceed, in the next section, to examine certain correctives of a general kind by which the swing of the trade cycle may be moderated, whether or not general prices are stabilised. Since, if they are not stabilised, disturbing factors originating outside the price system have a larger effect than they would have if they were stabilised, remedies or palliatives of this class are more important in

the world as it is than they would be under a reformed monetary system. In the fifth and sixth sections I shall study the problem of price stabilisation itself ; and in a final section shall inquire how far it may be possible to mitigate the evils of trade cycles by a deliberate shifting of the time incidence of certain demands.

III

1. As Dr. Marshall has observed, certain causes of irregularity in industry and the demand for labour, such as bad harvests, we cannot remedy, and certain others, such as human inventions, we should not (as a rule) desire to remedy. But over and above these we have found, as a dominating cause of trade cycles, wave-like swings in the mind of the business world between errors of optimism and errors of pessimism. These errors are, of course, a form of ignorance, and are therefore such as may be combated by knowledge. In Dr. Marshall's words, " the causes of discontinuity which lie within our scope and are remediable are chiefly connected in some way or other with the want of knowledge. . . . Better and more widely diffused knowledge is a remedy for that excessive confidence which causes a violent expansion of credit and rise of prices, as it is also a remedy for that excessive distrust which follows." ¹ Let us consider this remedy more in detail.

2. First, things would evidently be improved if, given the state of knowledge and the distribution of knowledge among people generally, it were possible to keep the effective direction of industry free from the influence of those persons who know least and whose judgment is least to be relied on. This suggestion opens up a wide subject. One very important aspect of it has to do with the floating of joint-stock companies. Most members of the general public, from whom the funds for these ultimately come, are, if left to their own devices, quite incapable of giving any reasoned opinion upon the various propositions that are, from time to time, put before them. Hence " one of the

¹ Marshall, *Money Credit and Commerce*, pp. 260-61.

chief sources of disturbance is the action of the general public in providing funds for joint-stock companies.”¹ The damaging effect of this unregulated action is the greater because the short-period prospects, in which promoters are interested, may easily be much rosier than the ultimate prospects, and it may, therefore, be to the advantage of these experts deliberately to mislead their clientele. Attempts have sometimes been made to mend this situation by regulations designed to prevent uninstructed members of the general public from dealing in the shares of new companies. The German rule forbidding the issue of shares of a low face value is directed to this end. A more fundamental remedy is to keep the work of promotion in the hands of bankers, whose reputation, of course, depends upon the *permanent* success of the business undertakings that they have fathered, and whose intervention, therefore, constitutes an effective buffer between the irresponsible promoter and the irresponsible subscriber of capital. It is not customary for banks in the United Kingdom to take charge in this way of business enterprises, and it is obvious that such action on their part might lead to a dangerous lock-up of their resources. On the whole, the practical difficulties in the way of extruding uninstructed persons from company financing and concentrating the work upon experts are probably too great to be overcome. It may be hoped, however, that, long before the general public have become competent to form for themselves sound judgments about investments, they will have at least discovered that they are not competent to do this and will avail themselves, before placing their money, of the consultation and advice, and not merely of the mechanical mediation, of brokers or other experts.

3. Secondly, whatever is done to head off incompetent persons from the investment market, promoters should be compelled to make full disclosure of all relevant facts to those from whom they solicit subscriptions of capital. Public control over the prospectuses of new companies and effective administrative action against fraudulent promotion

¹ Marshall, *Money Credit and Commerce*, p. 261.

are plainly desirable. Company law is, however, a highly technical subject, which a layman is not qualified to discuss. All that can be said here is that the more fully the law provides for a clear and intelligible statement of relevant facts, the better it will be, not merely for the pockets of would-be investors, but also for continuity and steadiness in industry as a whole.

4. Thirdly, besides financial information for people asked to subscribe to new issues by joint-stock companies, it is much to be desired that there should be published at short intervals full statistics about the stocks of various sorts of commodities on hand, and about the volume of orders under execution by the several firms engaged in important industries. Information of this kind would discourage firms from entering into contracts without reference to what their competitors are doing, and without taking adequate account of the probable effect of their action upon the cost of raw material and labour. In like manner it would discourage them from ordering, under the impulse of a temporary demand, an excessive number of machines and other instruments of production. It may be added that the stabilising influence of publicity would be strengthened if the practice of cancelling orders when a depression had set in could be checked either by custom or by law; for this practice makes the depression worse than it need be, both directly and also indirectly by encouraging reckless orders during booms.

5. Since, so long as an industry is operated by a number of separate firms, no practicable system of publicity can enable them to know as much about one another's doings as they would do if they were all under a single control, it may plausibly be claimed, in the fourth place, that the "trustification of industry" would tend to mitigate industrial fluctuations. It is easy to imagine conditions in which this claim would be valid, provided that the trusts were not of a sort liable to subsequent disruption. But the formation of large industrial combinations involves, in other directions, such a serious threat to social welfare that nobody desires the State deliberately to encourage it.

This "remedy," therefore, need not be more specially considered.

6. Fifthly, since, as was pointed out in Section II. 3, the common crowd character of business errors is in part due to the close financial interdependence of different concerns, shorter credits and a diminished use of borrowed money in business should prevent such errors as come to birth from propagating themselves so widely and attaining so large a growth as they tend to do under present conditions.

7. Finally, when an error of optimism is brought to light through the failure of facts to come up to expectations, the scale of the reaction towards pessimistic error that follows depends, to an important extent, on the technical skill with which financial crises are handled. When a boom breaks, a number of business houses are bound to find themselves insolvent as a result of rash speculation. These houses are unable to pay what they owe to others, and, consequently, a number of these others, though their position may be fundamentally quite sound, are at the moment much embarrassed. If, in these conditions, they are unable to obtain accommodation from the banks to tide them over their temporary difficulties, they too may crash; their bankruptcy in turn will put other houses into difficulties; and so on cumulatively, each new failure shaking confidence further. If, on the other hand, the banks are ready, and are known to be ready, to lend freely in panics to houses that are really sound, the range of the financial storm will be narrowed, and its repercussion upon business confidence correspondingly softened. Since the days of Bagehot, in the United Kingdom at all events, this has been well understood. It is the accepted rôle of the Bank of England in times of panic to meet the danger, not by shutting down its credits in a vain search for private safety, but, while raising the rate of discount substantially, to grant whatever accommodation is required to all borrowers who are able to offer adequate security for loans.

IV

1. We now turn to the large problem of price stabilisation. It will be recalled that, under present conditions, when business confidence expands two things happen. First, the business community are inclined to spend a larger proportion of their balances in investments, or, in other words, to turn over their balances more rapidly. Secondly, they are anxious to increase the amount of their balances—in order that they may have more to invest—by borrowing more from bankers. Both these things, the increased rapidity with which balances are turned over and the increased volume of balances available for turning over, involve at once a transfer of real resources from the owners of fixed incomes to business men and an upward movement of general prices. When business confidence contracts, analogous processes bring about exactly opposite effects. What device is it possible to introduce within the sphere of money and banking to prevent these things from happening, or, more modestly, to render the general level of prices less unstable than it now is?

2. Nothing can be done by those in control of monetary and banking arrangements to prevent business men from altering at will the speed with which they turn over their balances. Bankers can, however, within limits, control the volume of these balances. The smaller the extent to which in times of business confidence they allow them to grow, the less far will general prices rise; the smaller the extent to which in times of depression they allow them to contract, the less far will prices fall. If the volume of balances could be kept constant as between good and bad times, the movement of prices would be greatly reduced. If in good times the volume could be contracted so as to offset the greater speed of turnover and in bad times correspondingly expanded, that movement might, it would seem, be eliminated altogether. Plainly, then, the point of attack for anybody who wishes, through banking and monetary means, to render the level of general prices more stable, is the net volume of balances outstanding from the banks.

3. In the period of boom following the Great War, when, for various reasons, governments were unwilling that money should be made dear, it was urged that the growth of bank balances could be held in check, in spite of low discount rates, by a policy of "rationing credits." Ordinarily, of course, people who can give adequate security are free to buy as large an amount of loans from bankers as, at the ruling rate for money, they wish to buy, just as they are free to buy as large an amount of wheat in the market as, at the ruling price, they wish to buy. In the money market demand and supply are adjusted through the rate for money, just as in the wheat market they are adjusted through the price of wheat ; and there is no question of the sellers interfering through any other means with the quantity that the buyers take. Clearly, however, it is *possible* for sellers, in the money market and the wheat market alike, to fix a price adapted to find buyers up to such and such a quantity and then to ration the buyers to a smaller quantity than this. In the Great War this practice was adopted for a number of important articles of food. What is there to say about it as an instrument for controlling the volume of bank balances for the purpose of stabilising general prices ?

4. If bankers choose, they can, of course, in a period of boom refuse to lend to would-be borrowers, irrespective of the security they offer, as much money as those borrowers, at the ruling rate for money, desire from them. There are, however, a number of practical difficulties in the way of employing this procedure as a means of stabilising prices. First, deliberate assent to it would be needed on the part of a number of separate and independent banks. It is not to the direct interest of any bank to ration its (financially sound) customers in this way. Each bank would prefer that such rationing as has to be done should be done by its rivals ; and each will fear that, if it adopts a policy of rationing itself, a customer to whom it refuses a desired accommodation may go and find it elsewhere. In this matter the Central Bank cannot control the action of other banks, as it can, if need arises, in the matter of the discount

rate. Moreover, there are no recognised or easily formulated principles in accordance with which rationing should be regulated. For the rationing of food during the War a basis was available in the fact that different people's physiological needs are not very far from equal; and therefore, subject to a limited number of exceptions, equal rationing could be adopted. In the rationing of materials again there was a feasible basis in the pre-War requirements of different firms. Even here, of course, there were bound to be many hard cases and much difficulty. But for rationing credit in times of peace the difficulty of finding an acceptable basis would be enormously greater. Equal rationing would be absurd, and rationing based on past requirements would ignore the fact that in booms the needs of different borrowers expand in very different degrees. In the post-War period an attempt was made to ration in accordance with the purposes for which different people needed loans. But this plan not only involves a kind of inquisition for which bankers, at all events in England, are ill-equipped, but also requires us to decide what is the relative importance, from the standpoint of peace-time needs, of a multitude of competing purposes. In view of these difficulties, the conclusion is forced upon us that rationing, as a means of restricting bank credits in times of boom, cannot be made really effective. When we turn from times of boom to times of depression the result is even clearer. That rationing might, in certain circumstances, be used to restrict credits is, at all events, conceivable. But to suppose that it could be used to expand them is absurd. When the rate for money is given, the maximum that people will borrow is thereby rigidly determined, and there is no way, whether by reference to their needs or to their purposes, of inducing them to borrow more. On the whole, therefore, this method of controlling the volume of bank balances may be dismissed from our inquiry.

5. There is, however, another method of controlling these balances with a view to price stabilisation, for the success of which much greater hopes may rightly be entertained. This method has been called discount policy.

Rates of discount should, it is claimed, be regulated with the direct purpose of making prices stable. On this plan action would be taken, not by bankers generally, but by the Central Bank. The ordinary joint-stock banks have not, and, as individual banks, cannot obtain, sufficient control of the market. The Central Bank, however—in this country the Bank of England—has the necessary power. If it decides that a particular rate for money is desirable, it can always force the market to follow its lead by pouring money into it or drawing money out of it through the purchase or sale of large blocks of securities. The policy of price stabilisation through the discount rate means, then, a particular method of regulating discount rates by the Central Bank. As things are, central banks, in fixing their rates, look chiefly to the state of their currency reserve. Under the new plan they would look rather to the state of industry and prices. When there was reason to believe that prices were about to rise, the bank rate would be put up (and the market rate forced, if necessary, to follow). When there was reason to believe that prices were about to fall, the bank rate would be put down. In this way in boom periods borrowing would be checked and the volume of bank balances diminished—or prevented from increasing—and in periods of depression borrowing would be stimulated and the volume of bank balances encouraged to increase. The remedial policy thus roughly outlined has now to be studied in detail.

6. At the outset, attention may be directed to a fundamental objection by which it is sought to show that any such policy is bound, in the nature of things, to prove illusory. The rate of discount, it is said, is governed by and reflects the rate of interest on real capital. The causes that determine that rate, therefore, indirectly determine the rate of discount also. No doubt, for a short time a strong central bank could hold its discount rate above or below the rate for long loans (with due allowance for differences of risk) as determined by the demand and supply of new capital; but any attempt to do this for long is bound to be defeated by a transfer of borrowings

between the long and the short loan markets. Hence the Central Bank, despite its apparent autonomy, is not a free agent with an initiative of its own, but is merely a medium through which forces wholly external to it work their will. Though, therefore, in determining the rate of discount the voice is the voice of the bank, the hands are the hands of irrevocable economic law.

7. The answer to this objection is as follows. When the real demand for new capital expands, influences of the sort described in Section II. 5 push general prices up. This means that a forced levy is raised from the receivers of fixed incomes and goes to swell the supply of capital. This supply is not increased by the full amount of the forced levy, because the people from whom it is taken make, on account of it, a smaller voluntary contribution to new capital than they would otherwise have done ; but it is increased somewhat. If the banking and monetary arrangements are so altered that prices are kept stable when the demand for new capital rises, there will be no forced levy. Consequently, the supply of capital will be smaller, and the rate of interest required to balance demand and supply will be higher than it is when there is a forced levy. Thus, to manipulate the discount rate with a view to price stabilisation is not to remove it away from the rate to which the demand and supply of real capital point ; it is to conform it to this rate, but, by eliminating forced levies, to make this rate itself somewhat different from what it would otherwise have been. Moreover, it is perhaps worth while to add, the rate established in these conditions will be more " natural " and less " artificial " than the rate appropriate to a system of varying prices ; because, after all, to doctor the supply of capital by the addition or subtraction of forced levies is not a natural proceeding !

8. Granted then that a policy of price stabilisation through discount regulation is *prima facie* practicable, let us consider in what circumstances and in what degree it may be expected to attain success. We may take first a raising of the discount rate (accompanied by the necessary

measures to make a high rate effective in the market) as a means of preventing prices from rising as far as they would "naturally" do. The rates for short money having gone up, interest rates for longer loans are also forced up, because the short loan market and the investment market are, in some measure, rivals.¹ All forms of borrowing, whether for short or long periods, being made more expensive, borrowing will be discouraged. Of course, if the Government is in the market borrowing for war expenditure without regard to cost, this discouragement will, so far as its borrowing is concerned, be without effect on action. In general, however, an increase in the cost of borrowing may be expected to diminish the amount of it. It will have this effect in varying degrees on different sorts of borrowing. Thus, suppose that there are two men of equal ability each reckoning to get roughly the same return, say £10,000, for their efforts. One is a manufacturer with a factory worth £90,000 financed by debentures and a floating capital of £10,000 financed by short loans; the other is a merchant with a plant worth £10,000 financed by debentures and a floating capital of £90,000 financed by short loans. A rise in the price of short money from 5 per cent to 10 per cent, which lasted for a year, would increase the charges of the first man by £500, and those of the second by £4500; with the result that the earnings of the first would fall to £9500 and those of the second to £5500. Plainly in this second case—and it is typical of the merchant's position as compared with the manufacturer's—the discouragement and the consequent proportional check to borrowing will be much larger than in the first. In both cases, however, there will be *some* discouragement. Moreover, it should be added, the dis-

¹ This does not mean, of course, that the price of consols will fall far enough to make the yield on them rise to the level of the new discount rate. That would only happen if the rise in the discount rate were expected to be permanent. If we start from a position of equilibrium with both the discount rate and the yield on consols at 5 per cent, and if discount is raised to 10 per cent and is expected to stay at that rate for a year, afterwards returning to 5 per cent, the price of consols should theoretically fall so far that the return on them becomes, not 10 per cent, but 5·24 per cent.

couragement administered to merchants is reflected after a little while in a further indirect check to the borrowings of manufacturers. For the merchants, not wishing to hold such large stocks now that money is dearer, will cut down their orders. If manufacturers are booked up well ahead, this will not, indeed, affect their activity immediately. After a little while, however, as the earlier orders are worked off, they will find themselves with less to do and will contract their purchases of raw material and their aggregate payments to workpeople. Thus, as an indirect result of the check imposed on merchants, they will be led again to reduce their borrowings from banks. The net result of all this must be a diminution in the net volume of bank balances and a fall (or a check to what would have been a rise) in the general level of prices. It would seem that, by a sufficient raising of the discount rate (accompanied by the measures needed to make it effective), this remedy against rising prices could be applied with whatever degree of force was needed to achieve its purpose.

9. The effectiveness of discount policy is, however, less clear and certain when what is required is to prevent prices from falling. Just as a rise in the rate for money tends to discourage borrowing on the part of business men, so a reduction in the rate tends to encourage borrowing. But, when confidence has broken down, business men's demands for new loans may be not only small, but also highly inelastic, and it may require a very large reduction in the rate to produce any marked effect. To reductions in the rate there is, however, a limit which has no counterpart on the side of increases. If it is so desired, the rate, which we may suppose to have started at 5 per cent, may be pushed up to *any* extent we choose—to 100 per cent or even to 1000 per cent. But it cannot be pushed down beyond the limit of zero—so long, at all events, as banks are business institutions—for a banker, who can, if he chooses, hold his money in his own vaults, will never intentionally lend it out on a contract to receive back *less* than the amount he lends. Therefore, though, apart from Government

borrowings at unlimited rates, discount policy *can* prevent prices from rising or can force them down in any degree that is desired, it *cannot* in all circumstances prevent them from falling or force them up in any degree desired. The practical impossibility of negative discount rates restricts its power in this direction, though it does not, of course, destroy it.

10. This restriction seems at first sight exceedingly important. In fact, however, it is probably a secondary matter. The reason is that, as was explained in Section II. 3, periods of excessive optimism and excessive pessimism among business men do not arise independently, but are, as it were, generated the one from the other. If, therefore, errors of optimism can be prevented from arising, the disappointment to which they lead, and, therefore, the subsequent reaction towards errors of pessimism, will also be prevented from arising. In so far, therefore, as errors of optimism result from the fact that, when confidence begins to expand, general prices move upwards, a policy that prevented this upward movement would not only do away with errors of optimism, but would do away with errors of pessimism also, and there would not be any need for a direct attack upon these by combating falling prices. Of course, in fact, errors of optimism are not purely monetary in origin, and, therefore, to prevent prices from rising in booms would not completely abolish either them or the subsequent errors of pessimism which they engender. There can be no doubt, however, that errors of optimism are *in part* of monetary origin, and *pro tanto*, therefore, the preceding argument holds good. The larger the share in producing them that we attribute to monetary causes the less important shall we think it that discount policy, as against *falling* prices, is a somewhat feeble weapon.

11. So much being understood in a general way as to the nature and limits of a discount policy directed towards price stabilisation, let us inquire in what respects the practice of the Bank of England, if such a policy were adopted here, would differ from its practice under the

pre-War gold standard system. The normal working of that system is well understood. Banks, and Central Banks among the rest, are under obligation to pay the claims of their depositors on demand, and, therefore, must on no account allow these claims to exceed a safe proportion of their legal tender resources. This proportion is not, of course, fixed rigidly, and in times of boom, when everybody is confident, and when the business world is offering high rates for money, both the other banks and the Central Bank are inclined to allow the percentage of backing behind their liabilities to fall off. But they never allow it to fall off far. As the volume of their loans grows, the other banks safeguard themselves against any large reduction in their proportion by borrowing from the Central Bank, and the Central Bank, when it finds its own reserve falling, safeguards itself by raising the rate of discount. But an expansion of business confidence, in so far as it causes prices to rise, sets up a drain on the reserve of the Central Bank to meet the increased needs of the circulation at home and to pay for the extra imports which high prices stimulate. Hence, under the gold standard system it is normal for the discount rate to be raised at a certain time and in a certain degree in periods of business optimism, and, conversely, it is normal for the rate to be lowered in periods of depression. A discount policy directed towards price stabilisation would differ from this practice, not in the fact that the discount rate would be moved up in booms (and correspondingly down in depressions), but only in respect of the *time at which*, and the *extent to which*, the rate of discount would be changed.

12. Let us consider first the time incidence of discount changes. Under the gold standard system, as exemplified in England before the War, prices would begin to rise in consequence of a more rapid turnover of balances before the volume of these balances was altered, and before, therefore, even the proportion between the Central Bank's reserve and its deposits was touched. Moreover, it was to the absolute amount rather than to the proportion of their

reserves that the Bank of England used principally to look. This absolute amount was affected still later than the proportional amount; for the internal and external drains upon the reserve spoken of just now could not come into play until prices had risen appreciably and had continued at the higher level for some time. For a policy, however, whose purpose is stabilised prices it will not suffice for the discount rate to be raised when the reserve of the Central Bank begins to be depleted. It must be raised immediately the price level shows any tendency to mount. Nor, if we look more closely, is even this sufficient. The seeds of a rise in general prices are sown when merchants increase their orders to manufacturers and manufacturers begin to make plans for expanding their business; that is to say, not merely when prices have begun to rise, but some time before this. Thus those who control the discount rate must watch for such preliminary signs of boom as are afforded by changes in the volume of business orders, movements in the prices of speculative stocks, and so on. They must apply the brake to business expansion at a substantially earlier date than would be proper under the normal working of the gold standard system. In exactly the same way they must reduce the discount rate when industry shows signs of depression at a substantially earlier date than they would do under such a system.

13. At first sight it also seems necessary, if the policy of price stabilisation is to be effective, that the Central Bank should vary the discount rate by a substantially larger *amount* than was customary in the British pre-War scheme of things. For, in order to keep prices stable, it is not enough for bank loans to be prevented from expanding in booms and from contracting in depressions. They must contract in booms to cancel the effect of the increased rapidity of turn-over, and expand in depressions to cancel the effect of diminished rapidity. These movements, it is natural to believe, could not possibly be brought about without resort to *very much* larger changes in the discount rate than have been customary hitherto. In fact,

however, this conclusion is not certain. For, when once the new discount policy had become established and well understood, the knowledge, which business men would then have, that general prices would be prevented from rising, would destroy that part of their desire to borrow and to turn over their balances rapidly, which now arises out of the expectation in times of boom that general prices will rise. Thus the policy would achieve at least a part of its end, as it were, passively. The fact that large discount changes will be made at need reacts on business psychology in such a way as to make resort to large changes unnecessary; just as the fact of a man's being armed not only enables him to overcome resistance if it is made, but will also make resistance unlikely. Though, however, on account of these psychical reactions it is not certain that the discount changes required to effectuate a policy of price stabilisation would be larger than those customary now, yet, on balance of the various relevant considerations, we are, I think, entitled to conclude that it is probable.

14. However that may be, one broad conclusion emerges from this discussion. Even if it should turn out that a discount policy directed towards price stabilisation would not involve, for the Central Bank, the need of contracting its loans when demand for them is keenest and expanding them when it is lowest, it must involve for this Bank a course of action considerably less consonant with its own private interest than has ever been required of it up to the present time, whether in this country or elsewhere. To regulate their discount policy by the state of their reserves is for Central Banks sound business. The Bank of England has, no doubt, always regarded itself as a custodian of national interests as well as of the interests of its shareholders, and is not accustomed to act in the spirit of narrow self-seeking. The same thing can be said of other important Central Banks. But to ask a Central Bank to frame its discount policy with a view, not at all to the safety of its reserve or the profitableness of its business, but exclusively to keeping general prices steady, is to invite a private institution to act wholly for public

ends. It is legitimate to ask whether such a request is likely to meet with a favourable response ; and whether, therefore, the whole-hearted adoption of the policy which has been discussed in this section does not carry with it the supersession of such institutions as the Bank of England by Central Banks definitely organised as departments of Government.

V

1. In the preceding section it was tacitly assumed that the discount changes required under a monetary and banking system aiming at price stabilisation must be initiated by autonomous action on the part of the Central Bank. Another method is, however, available. The hands of the Central Bank may be forced through manipulation of the currency unit by the national government. This policy of price stabilisation through currency control must not be regarded as an alternative to the policy discussed in the preceding section. For the mechanism of it is exactly the same as the mechanism of that policy. Manipulation of the currency unit by Government affects prices not directly, but only by causing the Central Bank to alter the discount rate and so to bring about a change in the volume of bank credits. Consequently, a great part of what is necessary to say about currency policies of the type advocated by Professor Fisher has already been said. The additional comment to be made here may, therefore, be brief.

2. Professor Fisher's currency plan—and attention will be confined to this plan, because it is much more fully worked out than any other—is, in rough outline, as follows. For simplicity we suppose that it is adopted in one country only. In that country the currency, whether made of paper or of gold or of anything else, should be so constructed that the value of the material in a unit of it is worth very much less as material than it is when turned into currency. A Government Department should publish month by month an index number representing the variations in the purchasing power of a unit of currency. The

Mint or some corresponding agency should always be prepared to exchange currency into or out of gold bullion. The quantity of currency given or taken in exchange for a given weight of bullion would not, however, on Professor Fisher's plan, be a fixed quantity, but would be increased or diminished according as the index number of general prices showed a tendency to fall or to rise. When general prices began to fall, the Mint would sell currency for bullion below the market rate. Therefore more of it would get into the bank reserves. This would cause the discount rate to fall, the volume of currency to increase, and the demand for things in terms of money to increase. In this way the fall of prices, which was threatening to come about, would be checked. In like manner, when general prices began to rise, the Mint would buy currency for bullion above the market rate, the bank reserves would be depleted, the discount rate forced up, bank loans diminished, and the rise of prices, which was threatening to come about, checked accordingly. In short, to employ Professor Fisher's terms, the Mint—or whatever Government authority might be selected for the purpose—would buy and sell currency in terms of bullion in such a way as to maintain, so far as possible, "a par, not with a fixed weight of gold, but with such a weight of gold as should have a fixed purchasing power."¹ I am not concerned here to examine the technique of this plan or the difficulties of detail which it would have to encounter. The general principle of it is, however, plain enough.

3. In comparisons between the Fisher plan and discount control at the discretion of the Central Bank it is sometimes thought that, whereas the latter does, the former does not, involve an abandonment of the gold standard, to which it is the avowed policy, at all events of this country, to return as speedily as possible. Now such movements of the discount rate as are required to prevent prices in one country from fluctuating *more* than world gold prices are implied in the gold standard itself, and obviously do not involve the abandonment of it; and it would, no doubt, be

¹ Fisher, *The Purchasing Power of Money*, p. 342.

possible to push discount policy a little farther, so that prices in one country should fluctuate slightly less than world gold prices, without breaking down the standard. But, unless world gold prices themselves were nearly stable, either on account of some fortunate accident or as the result of deliberate international control of gold values, it would not be possible to press discount control to its logical conclusion and make the price level in our country stable, while at the same time leaving the gold standard intact. Thus, suppose that, in the world outside our country, gold prices rise. Exports will then flow out of our country and gold will flow into it, and these movements will continue so long as the discrepancy between internal and external gold prices continues. The Central Bank in our country may force its rate of discount higher and higher, and, by this means, for a time draw the inflowing gold into its vaults and prevent it from causing an expansion in the internal volume of purchasing power. But plainly it cannot do this long; for, all the time that it does it, the country will be pouring out ever-growing floods of exports and receiving against them something of which no use whatever is being made. Prices, therefore, *cannot* be stopped from rising unless the gold standard is abandoned and the import of gold prohibited. Again, if in the world outside our country, gold prices fall, imports from abroad will flow into it and gold to pay for them will flow out. The Central Bank may attempt to hold prices up by lowering its discount rate and offering more and more credit on the basis of each unit of its gold reserve. But it cannot carry on this policy for long, because, if it does, the whole of its gold reserve will be drained abroad and the foundation of the country's monetary system will collapse. Prices, therefore, *cannot* be stopped from falling unless the gold standard is abandoned and the export of gold prohibited. In short, unless it so happens that gold prices in the outside world are fairly steady, it is impossible for price stabilisation to be achieved in any one country by the instrument of discount policy, except at the cost of abandoning the gold standard. In the last resort, a policy of price stabilisation

through control of discount by the Central Bank and the Fisher plan both involve this—and, with it of course, instability in the rates of exchange with gold standard countries.

4. When once this is understood, it becomes plain that advocates of thorough-going stabilisation through discount policy should be ready converts to the Fisher plan or to something analogous to it. Under the discount plan the price level is left to the discretion of a private institution—or a semi-private institution—and that institution is expected to exercise its discretion in a way that admittedly conflicts with its own interest. Even if it does not in fact fail to exercise its discretion rightly, people are certain to suspect it of so failing, and this will be a source of distrust and insecurity. The Fisher plan leaves the Central Bank to act in its own interest to the same degree as it does at present, but, by manipulating the currency supply, it associates that interest with a treatment of the discount rate which makes for price stabilisation. It is true that the Fisher plan could not by itself bring about complete stabilisation, for under it the currency unit would only be altered *after* prices had changed: whereas a Central Bank exercising discretion could act on the evidence of preliminary signs. This, however, is not an argument in principle against the Fisher plan; for that plan could be modified in such a way as to allow action to be taken under it on the evidence of these signs. Though, however, it would be foolish to advocate a thorough-going use of discount policy and yet to kick against the Fisher plan, it is perfectly reasonable to advocate a mild use of discount policy and nothing else besides. In practical affairs, to introduce large changes the meaning of which most people cannot understand is dangerous. So far as the United Kingdom is concerned, until the gold standard has been re-established, more elaborate improvements in our monetary system are not practical politics. When it has been re-established public opinion is unlikely, for some time, to sanction any formal departure from it. If this is so, both the Fisher plan and any thorough-going

attempt at stabilisation by discount policy are ruled out of court. There may, however, be room for such mild application of a stabilising discount policy as is consistent with the retention of the gold standard. This would imply a readiness on the part of the Bank of England to raise its discount rate in periods of prosperity somewhat earlier and somewhat higher than it has hitherto been accustomed to do. The effect of this policy taken by itself would not probably be very great. If and when, however, political conditions become less unfavourable, it may be possible to supplement it by international action, directed, as the Genoa Conference desired, towards steadying the world value of gold itself.

VI

1. We now turn to the last of our three broad groups of remedies. Up to the present we have supposed consumers and producers to regulate their conduct with a view to their private economic interest, and without regard to the general social evils attaching to industrial fluctuations. It is open, however, to certain groups, whether from philanthropic motives, or under the pressure of public opinion, or under the coercion of fiscal action by the State, to modify the time-incidence of their purchases with the express design of mitigating these general social evils. In the following pages I shall study some of the ways in which this may be done.

2. Let us consider, first, action by groups of producers ; and let us suppose that the groups with which we have to do are accustomed to increase their output in times of boom and to diminish it in times of depression. Plainly, even though they act exclusively in their own private interest, they will not be altogether indifferent to steadiness of production. If in the aggregate a million bales of goods are to be produced in ten years, it will be cheaper, because it will not need so large a plant, to produce 100,000 bales each year than to produce 50,000 in some years and 150,000 in others. But, if they act exclusively in their own interests, individual producers, though they will pay

attention to this, will not pay attention to the social advantage of steady employment for labour. It is true that steadiness of employment should make possible, without disadvantage to any one, a lowering in the hourly or daily rates of wages required ; but, from the point of view of a few firms only in a large industry, the main part of the gain from this would go to other firms, and, from the point of view of all firms collectively, it would go to consumers. It follows that, if any group of producers can be persuaded or induced to base their action on the general interest and not on their private interest alone, they will thereby be led to transfer some part of their productive activity from boom times to times of depression. Let us examine the various conditions by which the scope of this remedial action is determined.

3. If a manufacturer or other producer is to shift any part of the production that he would normally have undertaken in good times to bad times, he must either offer more of his stuff on the market in good times (and correspondingly less later) or he must make more for stock in bad times and dispose of the stock in the good times that follow. Take first the device of additional manufacture for stock. A manufacturer who adopts this "remedy" against industrial fluctuations does not damage the market for other producers in bad times ; and does not therefore impel them to produce less, thus cancelling in part the addition to his own production. It is true that, since he may have to make increased calls on banks for accommodation, he may, in a slight degree, put up the price of money and thereby obstruct other producers ; but the amount of cancelling that would take place in this way is probably small. There are, however, only a limited number of industries in which any large amount of manufacturing for stock is feasible. Obviously producers who make goods to the specification of their customers cannot make for stock. Nor in practice can those who manufacture goods which are liable to rapid changes of fashion ; for the risk of loss would be too great. Nor again can those who manufacture goods which are either quickly

perishable or are so bulky that the cost of storing them is very large relatively to their value. The opportunity for applying this remedy against industrial fluctuations is, therefore, confined to producers of staple goods which are at once durable and fairly cheap to store, and there are not very many of these.

4. There remains the other plan open to public-spirited producers. They can, if they choose, deliberately maintain in bad times a larger output than their private interests suggest and throw it upon the market. There are records of some firms engaged in the manufacture of specialities which have contrived to do this without appreciable injury to themselves by spending more money on advertising and salesmanship in bad times than in good, thus deliberately moulding the market to suit their needs.¹ This device, however, is only open to makers of specialities. For the main body of producers the only way in which sales can be pushed in bad times is by a reduction in price. For a single manufacturer among a number of others to force a market by cutting prices cannot accomplish much towards general stabilisation, unless the product is one for which the demand is very elastic, because the reduction in price will make other manufacturers contract their output almost as much as their public-spirited colleague has expanded his.² If, however, the main body of manu-

¹ *Business Cycles and Unemployment*, p. 126.

² The extent to which one producer's action is cancelled in this way and the extent to which, in corresponding conditions, one consumer's action is cancelled can be determined mathematically as follows.

Let there be n producers, each normally producing x units, with an elasticity of supply e ; and let there be n consumers each normally purchasing x units with an elasticity of demand $-\eta$.

Then, if one supplier increases the quantity he supplies from x to $(x + hx)$ units, thus adding hx units to his supply, the addition to the supply of all the suppliers together is approximately

$$hx \frac{-n\eta}{-n\eta + (n-1)e}.$$

Correspondingly, if one demander increases the quantity he purchases from x to $(x + hx)$ units, thus adding hx units to his purchases, the addition to the purchases of all the demanders together is approximately

$$hx \frac{ne}{ne - (n-1)\eta}.$$

facturers engaged in some industry, and not merely one or two of them, were to undertake jointly this policy, their effort would not be open to this sort of cancelling, and would, therefore, be proportionately more effective. As regards luxury and semi-luxury consumption goods, for which the demand is fairly elastic, a good deal might be done in this way to stabilise production at no great cost to the producers. But for those important instrumental goods, the production of which is in fact liable to vary most largely, the demand is likely to be highly inelastic; and this means that sales could not be pushed

Write $-\eta = er$. Then the aggregate addition to supply, due to an addition of hx to the supply of one supplier

$$= hx \frac{nr}{nr + n - 1}$$

$$= hx \frac{1}{1 + \frac{1}{r} - \frac{1}{r} \cdot \frac{1}{n}}.$$

Correspondingly, the aggregate addition to demand due to an addition of hx to the demand of one demander

$$= hx \frac{n}{nr + n - r}$$

$$= hx \frac{1}{1 + r - r \cdot \frac{1}{n}}.$$

Whatever the value of r , both these expressions become equal to hx when $n = 1$; when n is small, say anything less than 4, they are substantially nearer to hx than when n is large, and, so soon as n has become large, they are approximately the same whether it is moderately large or very large.

The above formula shows further that, when the acting supplier or demander contributes only a small part of the whole market, this supplier's increase of output by hx leads to an aggregate increase of

$$hx \frac{-\eta}{-\eta + e}$$

and this demander's increase of consumption by hx to an aggregate increase

$$hx \frac{e}{-\eta + e}.$$

Therefore, a supplier's increase of supply is only cancelled to a slight extent when the demand is very elastic; and a demander's increase of demand is only cancelled to a slight extent when the supply is very elastic. If the two elasticities are equal, either kind of increase is cancelled to the extent of (approximately) one half.

much in bad times except at the cost of a very large fall in prices, and, therefore, of a very heavy loss to manufacturers.

5. We have next to consider the opportunities for promoting industrial stability that are open to public-spirited consumers. Let us begin by imagining a group of consumers who are accustomed to purchase some given commodity. Acting exclusively with a view to their own private interest, they would, we will suppose, buy this commodity in larger quantities at times when other purchasers are buying it in larger quantities, and in smaller quantities when other purchasers are doing this. Moreover, we will suppose further, the times at which they and others are inclined to buy the commodity in large quantities coincide roughly with times of general trade activity, and conversely. This group of consumers decides that, instead of buying clothes, as they do now, at the times when they specially want them or can most conveniently afford to pay for them, they will, in the interest of society at large, shift a substantial part of their purchases away from periods of prosperity to periods of depression. What, in detail, will be the effect of their action ?

The first effect will be as follows. Since these consumers are demanding more clothes in bad times and less in good, the price of clothes in bad times will be higher and in good times lower than they would otherwise have been. Consequently, other consumers will buy less in bad times and more in good times than they would have done. In this way the net addition to the quantity of clothes bought in bad times and the net subtraction from the quantity bought in good times will be smaller than the addition and subtraction for which the public-spirited consumers are personally responsible. The extent to which the effect of their action is cancelled in this way depends upon two things : (1) the proportional part of the total demand for clothes that their demand constitutes, and (2) the degree of elasticity in the demand of other buyers of clothes. The larger the proportionate part played by their demand and the less elastic the demand of the others, the smaller the proportion of cancellation will be. It follows, among other things,

that, if two million people decide to apply the remedy for industrial fluctuations here described, the effect of their action will be more than twice as great as the effect of similar action by one million people.

The second effect is this. Some net shift-over in the monetary demand for clothes, as between good and bad times, having taken place, the stores of these things in shops are correspondingly affected, with the result that the demand of shopkeepers upon manufacturers for new stock is made smaller in good times and larger in bad times than it would otherwise have been. This means in turn that manufacturers set less labour to work in making clothes in good times and more in bad times than they would have done. This alteration, however, involves a reduction in the demand of manufacturers for accommodation from the banks in good times and an increase in it in bad times. The rate of discount will therefore be lower in good times and higher in bad times than it would have been. This will cause other would-be borrowers and employers of labour to borrow less in good times and more in bad times ; so that the changes brought about in the demand for the services of clothes-makers will be partly cancelled by inverse changes in the demand for the services of other sorts of workpeople. The proportionate effect of this cancelling tendency will be smaller the larger is the proportion of the total expenditure of the community that is controlled by those persons who have decided to adopt this "remedy" for industrial fluctuations.

From this analysis we reach the following conclusion. A group of consumers, whose purchases of any particular thing would normally vary in conformity with the general movements of the trade cycle, can do something towards mitigating the swing of that cycle by transferring, if they are ready to make the sacrifice, some part of the excess demand which they usually make in times of prosperity to times of depression. The proportionate effect of such action, when it is undertaken on a small scale, will be much less than when it is undertaken on a large one. The amount of sacrifice involved to the persons undertaking it

will, however, vary directly with the number of those persons. Hence, what it would "not be worth while" for a small group of consumers to do, in the sense that the benefit to the community would not repay the cost to them, it may be worth while, in this sense, for a large group to do.

6. The preceding discussion is in form quite general. There is, however, a particular application of it which is much more important practically than any other. This concerns the policy of central and local government authorities in ordering things which they normally require more largely in times of boom than in times of depression. Many writers hold that, by transferring a part of their demand from good times to bad, such bodies could make a very important contribution towards the stabilisation of industry. It is pointed out that there is a very large amount of expenditure on military equipment, schools, roads, street paving, tramways, electric lighting plant, and innumerable other things, which is not urgent to a particular moment but might easily be spread evenly as between good times and bad, instead of being concentrated chiefly upon good times. There can be no doubt that, if this were done, the amplitude of the trade cycle would be, in some degree, lessened. There are, however, certain practical obstacles which limit the range of this remedy. Of these the one with which chief play is made in popular discussions is financial. It is pointed out that in bad times the proceeds of taxes, and, in a less degree, of local rates, are apt to fall off, and that, consequently, national and local authorities *cannot afford* to undertake improvements or erect new buildings so freely as they can in good times. If they do undertake these things, it is said, they can only do it at the cost of raising more money from the public, and so causing private expenditure to contract as much as public expenditure is expanded. This argument, however, is defective in two ways. First, it ignores the fact that in bad times governing bodies, central and local, are compelled, in one way or another, to spend large sums in supporting people whom the bad times have thrown out of work. It may

reasonably be presumed that an increase in the demand for labour, brought about by Government and municipal orders, would lessen the number of those persons, and that, consequently, a portion at least of the funds required would be provided by the reduction of this other form of Government expenditure. Secondly, it ignores the fact that, in so far as new funds were wanted, they could be obtained by creating new bank credits, or, rather, by preventing the net volume of these credits from being cut down so far as they would otherwise have been. In view of these considerations, the purely financial difficulty in the way of this stabilising policy does not seem to have great weight. A much more serious obstacle is the uncertainty in which future needs are always necessarily shrouded. A town cannot be *certain* now that it will want more school buildings five years hence; nor, five years hence, when it does want them, can it conveniently postpone its needs. The central Government, again, cannot forecast exactly its future need for ships and guns; it will not care to anticipate these needs for fear of saddling itself with obsolete types, and, when the need becomes urgent, it will not dare to delay. These considerations do not, however, apply to all the things needed by local and central Government authorities. On the contrary, there is almost certainly large scope for action by these authorities along the lines here described.

7. Up to this point, both in our general analysis and in the particular application of it developed in the preceding section, we have confined ourselves to the proposal that producers or consumers, whose output or demand normally varies in the same sense as the output or demand of the community in general, should endeavour to steady aggregate output or aggregate demand by transferring some of their own excess in good times to mitigate their deficit in bad times. Let us now suppose that a particular group of public-spirited consumers—the reader, if he so desires, can easily extend the analysis to producers—has, either as a result of deliberate policy or, as it were, by accident, acquired a demand that is absolutely steady as between good and bad times. Is it desirable that such a group

should intentionally make its demand unsteady, in a sense inverse to the unsteadiness of the general demand? This question is of some practical importance and calls for a brief study.

8. Other things being equal, the trade cycle must be *pro tanto* smoothed out, in the sense that the excess of unemployment in bad times over good times must be lessened, if the quantity of labour demanded by manufacturers is increased in bad times or decreased in good times. It follows, therefore, that the unsteading of steady demands for dovetailing purposes will, in all circumstances, lessen the amplitude of the trade cycle, and will, therefore, constitute, in a sense, a true remedy for it. But it does not follow that it will in all circumstances constitute a *desirable* remedy for it, leading to an increase in aggregate social welfare. For, while it is possible to make employment more equal as between good times and bad by increasing employment in bad times and not diminishing it to an equal extent in good times, it is also possible to do this by diminishing employment in good times and not increasing it to an equal extent in bad times. In the latter event, social injury and not social benefit will result. We have, therefore, to consider in what conditions the unsteading of steady demands for dovetailing purposes will promote steadiness in the former sense and in what conditions in the latter sense.

9. This issue turns on the degree of mobility enjoyed by the workpeople who are affected. If the demand for labour in any part of industry is made unsteady so as to compensate for an inverse unsteadiness in some other part of it to and from which that labour can move immediately without any cost, the net effect will be to diminish each of two labour pools and to increase the sum total of employment in good and bad times taken together. If, on the other hand, in any part of industry the demand for labour is made unsteady with this purpose, but the labour affected is not free to move, the net effect will be to increase the sum total of idle labour over good and bad times taken together, and so to lessen, and not increase,

social welfare. Thus, a municipality which should unsteady its demand for building so as to dovetail it into the interstices of private demands for building in the same locality would almost certainly do good ; but a national Government which should unsteady its demands for afforestation so as to dovetail it into the interstices of the private demand for ship construction might very easily do harm.

10. Besides groups of consumers whose demand would normally vary in the same sense as general demand and groups whose demand would normally be steady, there are also groups whose demand would normally vary inversely with general demand. Is it desirable that these groups should endeavour to make their demand more steady or leave it as it is ? The analysis of the preceding section enables us to answer this question. If these groups make their demand more steady, they will increase the amplitude of the trade cycle, in the sense that they will make the excess of the demand for labour in good times as against bad times larger than it was. If labour is mobile between their service and the service of others, they will also lessen economic welfare as a whole ; but, if labour of the sort that they are employing is immobile between their service and that of others, they will increase economic welfare as a whole.

11. Finally, it should be observed, there are, or may be, groups of consumers whose demand contains peaks and depressions which it is not possible to smooth out, but is possible, in some measure, to transpose in time. If the peaks normally occur when the general demand is high, it cannot, even if labour is absolutely immobile, do any harm to transpose the peaks and the depressions. If the labour affected is mobile, it is bound to do some good.

THE PROBLEM OF FINDING EMPLOYMENT ¹

Professor GUSTAV CASSEL

THE result of the growth of population and the industrial development which took place during the nineteenth century has been that some European countries have got a population far exceeding what they can feed by their agriculture, and that these countries therefore are dependent for their very existence on the continuous supply of food and raw materials from abroad. Great Britain had the lead in this development, and has perhaps advanced farthest in the direction of such dependence upon supplies from the outside world. A steady stream of food, of raw materials produced by agriculture, and of other materials such as timber and ores, is flowing into Great Britain from all parts of the world, and is paid for by a stream, in the opposite direction, of British products. This exchange of commodities must go on day and night on a colossal scale and must never be interrupted. There must always be people in different parts of the world willing to buy the products of Great Britain. When this gigantic machinery functions well, nobody thinks of it, everybody finds it quite natural that he should be furnished with what he is accustomed to use, and very seldom reflects upon the fact that, day by day, and year by year, when rising from his bed, he needs to be supplied with cotton from America, wool from Australia, leather from South Africa, and when going to his breakfast table, with eggs and bacon from Denmark, bread from Canada, tea from Ceylon, etc., etc., and is paying for all

¹ This article was written in the autumn of 1923.

this by some very specialised work, or by performing some very particular function. If we did reflect a little more upon this system we should find it to be nothing less than a miracle that such extremely complicated machinery can function at all, and, still more, that it can function with the regularity and precision that it used to display before the War. Indeed, it cannot be denied that the whole system is highly artificial. But it is artificial in the same sense as any product of advanced civilisation which draws us farther and farther away from what are called natural conditions. To recognise this is not to condemn the development. But it is to acknowledge the extreme delicacy of the conditions on which our modern life is based. We are dependent not only for our comfort, but indeed for our lives, on the smooth and continuous functioning of this great machinery of modern trade. And the more the system develops, the more serious, not to say disastrous, must be the effects of a disturbance in the working of the machinery.

As the population of Great Britain is continually growing, the smooth functioning of the system not only requires a certain stability of the conditions which have made the exchange of goods desirable, but also a continual development of these conditions, that is to say, a continual growth of the market for British goods and a continual development of productions for which the outside world can send us payment. An industrial country such as Great Britain is also dependent to a large extent upon the very progress of the world, viz. in so far as the country is devoting its productive power, particularly in the iron industries, to fresh constructional work, such as buildings, railways, railway equipment, and electrical installations. Every slackening of the world's rate of progress is bound to cause considerable unemployment in such trades.

Under these circumstances it is only natural that the world-wide trade of Great Britain should be very much dependent upon a certain amount of stability in the political conditions of the world, and, primarily, on the maintenance of peace. The machinery of international trade is

similarly very much dependent on a certain amount of international freedom of movement, and it is apt to be seriously disturbed by any aggravation of the hindrances represented by national frontiers. Last, but not least, the machinery of trade is dependent upon a sound system of money both at home and abroad. To realise the essential importance of a stable monetary system, we need only reflect for a moment upon the fact that the whole of the world's trade, although it is in essence a barter, is carried on in the form of sales and purchases in terms of money, and that these terms have no exact meaning unless the units of money are well defined and possess a fair stability. We need only reflect for a moment on these conditions to understand how extremely delicate international trade is, and how disastrously it must be affected by the present utter confusion of the world's political and monetary relations. It is certainly not necessary to search for more remote explanations of the widespread and protracted unemployment which has for some years proved such a great calamity to Great Britain.

It is often thought that foreign competition is the most important of all the factors which adversely influence the development of British trade, and very far-going conclusions, always unsound and sometimes disastrous, have been drawn from this conception. The industrial development of Great Britain began with very little foreign competition. But later on this competition acquired great strength, and was taken up by a steadily increasing number of countries. If the protectionist's views were right, this formidable competition would long ago have completely crushed the industry as well as the trade of Great Britain. But the actual results are the opposite. In spite of all competition, the economic development of Great Britain, as well as her intercourse with other countries, shows steady and splendid progress. The appearance of foreign competition only means that other countries have gone through the same stages of industrial development as Great Britain, have increased their population, and therefore have been bound to enter upon industrial production

for export. If we look on the world as a whole, this development of industrial production clearly means that the world has become so much richer. The only question is whether there is a market for all these industrial products. But this is the same as to ask whether the rest of the world is able to produce as much food and as much material as are required to pay for the products of industry. A limit is here conceivable. That would mean that the resources of the world at large were no longer sufficient to feed its growing population. But, clearly, we are not yet there. Our present difficulties are certainly not caused by any shortcomings in the world's capacity for producing raw materials and food. On the contrary, a series of the most important of such products are supplied in abundance, as may easily be seen by the fact that their prices have been depressed on international markets relatively very much below their pre-War levels. Thus competition has in general not prevented any industrial country from getting its share of the raw materials and food required. On the contrary, competition has made the world richer, and this has, on the whole, been to the advantage of the competing countries.

We must also take account of the moral effects of competition. These are particularly important in the case of Great Britain. British industry had, by being the first on the spot, attained such a comfortable situation that the inducement to further progress would undoubtedly have slackened except for the stimulus of foreign competition. It is easy to imagine how very backward the industrial conditions of Great Britain would have been at the present time if the industrial leaders and the workmen of the country had not been confronted with the necessity for doing their best. And, in particular, German competition, which has given rise to so much ill-feeling and so much hostile agitation, will perhaps be found, on closer examination, to have been on balance a real blessing to Great Britain, particularly by having forced her to put her whole industrial development on a more scientific basis, and to adapt her trade more closely to the wants of foreign markets. Britons

never do their best except when exposed to fierce competition. It is certainly not good for any country, and least so for Great Britain, to be in any way artificially protected against forces which sometimes may seem disagreeable enough, but which have, on the whole, an educational value.

To crush, by military force, or by other political means, a competition which is felt to be troublesome, may seem a short way to get rid of it. But this is certainly very bad advice. It is in general impossible to crush a political adversary without also crushing him as a customer, and causing such widespread disturbances of trade conditions that the pernicious results are felt even for the home country, and perhaps in the most unexpected ways. To these results are to be added the financial effects, which generally prove to be extremely discouraging. After all, such endeavours to crush competition by violent means will only prove to have impoverished the world as a whole, and to have restricted the fields for competition instead of enlarging them. Indeed, aggressive national protectionism is based on the same fundamental mistake as the most primitive forms of trade union protectionism, viz. that there is a given amount of employment to be shared. This is a mediæval conception. The modern mind is governed by the idea that there is always room for expansion, and that the amount of employment that can be found always increases and is primarily dependent upon efficiency and willingness to exert oneself. Only on such lines is there a future for the world's trade, and particularly for the trade of Great Britain.

If it is once made clear that it is essentially neither competition nor any real shortness of the world's resources that hinders the development of British trade and causes the present terrible state of unemployment, we are forced back to the true explanation, which is rejected by people partly on account of its very simplicity, and perhaps also on account of a general reluctance to recognise a disagreeable political reality. It is that Great Britain is suffering from the disorganisation of the world's trade that has

followed upon the War, but which is in fact mainly a result, on the one hand, of the extreme short-sighted and unwise policy of suppression and exhaustion which has taken the place of real peace, and, on the other hand, of the failure to restore sound monetary conditions in the world.

The world is much more a unit than people imagined ten years ago. The economic dividing up and suppression of great parts of Central Europe not only mean the impoverishing of these countries, but must have much more far-reaching effects. The world's productive machinery has been brought into disorder and is suffering a loss of efficiency, with the result that there is a diminution of the world's income. The countries which used to sell food and raw materials to Central Europe are now, to a great extent, cut off from their market and are therefore seeing their own buying capacity reduced, and this is felt by a series of industrial countries all over the world as a restriction of their markets, causing widespread unemployment. This general interdependence between different parts of the world's trade may in particular cases be very complicated. But the general nature of the phenomenon has now been so well elucidated by hard experience and by thorough study that it is grasped by most people interested in these matters, and it is therefore not necessary here to enter further into the subject.

Of course, even if Central Europe definitely disappeared from the map of the world, the world could reorganise itself and gradually adapt its production and its commerce to the new conditions. But this would necessarily be a slow process, and it would certainly take a long time to restore the former prosperity. As it is, we have to reckon with Central Europe as a part of the world, and it is all nonsense to speak of schemes of development based on the assumption that Central Europe can altogether be ignored. Certainly the shortest way to restore anything like prosperity to the outside world, and particularly to Great Britain, is to put Central Europe in working order again. The markets that have been lost have been lost mainly by disorganisation, and therefore it is obviously

most natural to try to make good the loss by reorganisation of a machinery which once functioned well.

The acknowledgment of this truth, of course, should not stand in the way of a recognition of the necessity for Europe, as a whole, to create new markets and new sources of supplies by further colonisation of such parts of the world as are still absurdly underpopulated in comparison with their rich natural resources. This is a work which must always go on as long as such districts exist and as long as the white race still possesses a power of expansion. In this way we must try to find employment both at home and abroad for the thousands and millions continually being added to the population of industrial Europe. But this progress can by its nature only be gradual, and for a remedy for the present acute unemployment we must look to a reorganisation of the parts of Europe whose economic life has been disturbed and is being ever more and more completely ruined by an extremely unwise policy. I must repeat here what I have said on several other occasions: Only a real peace going so far as to establish a true co-operation between countries once at war with one another can save Europe from progressive ruin, and give regular work again to her armies of unemployed, and particularly to those of Great Britain.

There is, however, as I said, another main cause of the disorganisation from which the world's production is suffering. This cause is the instability of our monetary standards. This evil is not confined to countries with more or less ruined standards. Even for countries which already possess a gold standard or are very near to realising their aim of restoring the gold standard, the lack of stability in the value of money is a most important source of far-reaching disturbance in their economic life, and therefore also a source of unemployment. After having reached a minimum in the first half-year of 1920, the value of gold has been increasing by about 50 per cent, *i.e.* the general level of prices reckoned in gold has been brought down approximately from 240 to 160. As could be foreseen, this process of deflation has had an extremely

injurious effect on enterprise, and particularly on new construction, and, therefore, has been the cause of much unemployment. True, the process of deflation in the United States came to a standstill as early as 1921, and from the latter half of 1922 the American price level has shown a remarkable stability. But there is always the danger that the American deflation may be resumed and that prices reckoned in gold will be brought down still further. This makes an element of uncertainty which doubtless has some influence in discouraging enterprise. For Great Britain there is the additional difficulty that the pound cannot be brought up to full parity with the dollar, and that therefore the old gold standard cannot be restored without a certain amount of deflation which, though certainly not very considerable, nevertheless is looked upon as a serious cause of disturbance, in an economic situation which is already characterised by a depression of trade and an alarming degree of unemployment. This difficulty would, of course, be most easily solved if the United States made more liberal use of their abundant gold resources and allowed their level of prices to rise to some extent. In this way the parity between dollar and pound could be attained without any further deflation in Great Britain. In the meantime, it seems to be absolutely necessary for Great Britain not to allow her currency to sink any further in value, and therefore to apply such a monetary policy as will prevent the general level of prices from rising above its present level. When the bank rate was raised in July last from 3 to 4 per cent this measure was very much discussed. But as far as can now be seen the new rate has not been higher than was required to prevent a further rise of the general level of prices, and not even high enough for that purpose.

Our experience of the instability of the value of gold after the War, and of the pernicious effect of this instability upon trade, points most clearly to the desirability of establishing a close co-operation between the countries actually interested in the gold standard, and particularly between the United States and Great Britain. The aim of this

co-operation must be to keep the value of gold as constant as possible, *i.e.* to establish the highest attainable stability in the general level of gold prices. The realisation of this aim will very much facilitate the restoration of the gold standard. If, in addition, countries with a considerably depreciated standard would accept the recommendation of the Genoa conference to stabilise their currencies at their present value, and thus at the earliest date introduce a new gold standard, the world could in a comparatively short time come back to a system of stable currencies and fixed exchanges. This, of course, would be of very great importance for the recovery of the world's production and commerce, and Great Britain would doubtless derive from such a recovery such considerable advantages that the sacrifices required for the restoration of her gold standard must be regarded as relatively unimportant.

The present monetary situation is disturbing, not only on account of the instability of the monetary standards, but also in consequence of one fact which is quite peculiar to our time, *viz.* the more or less considerable undervaluation of some currencies. This undervaluation means that the currency of the country is valued on the international exchanges at a lower price than would correspond to its purchasing power within the country itself. The effects of such an undervaluation are now well known; a bonus is given to the exporters of the country whilst the imports are hampered, and thus the normal course of international trade is very much disturbed. Since Germany has practically ceased to have any monetary standard, France is perhaps the most important example of a country with an undervalued currency. It is generally recognised that the undervaluation of a currency is a great disadvantage for the producers of other countries, and may be an important cause of unemployment for them. But the undervaluation is by no means a net advantage to the country whose currency is exposed to it. It would obviously be absurd to say that a country could make a real gain by discrediting its own currency. The pernicious effects of an undervaluation on the home market

are, without doubt, very serious, and in the long run it must be ruinous for a country to sell its export goods at the artificially reduced prices which the undervaluation makes temporarily possible. For the restoration of the world's trade and the abolition of unemployment it is, of course, very desirable that we should get rid of all undervaluation of currencies. But that is the same as to say that we must establish confidence in the future of the various currencies. The first condition of such confidence is, of course, that the countries concerned should attain an equilibrium in their budget and thus be able to secure stability for their currencies.

After this general survey of the causes of unemployment it remains for us to consider more closely the position of the British producer, and particularly the disadvantages from which he is supposed to be suffering in his competition with foreign producers. Among these disadvantages a prominent place is often given to the high value of the British currency in comparison with that of the currencies of competing countries. This difference in the international value of the currencies, however, represents a disadvantage for the British producer only if it is the result of an undervaluation of the foreign currencies on the international markets. But if the low international value of the foreign currency only corresponds to its reduced internal purchasing power, the very fact that the value is low is of no consequence and cannot in itself be any disadvantage for the British producer. Thus the remedy for this class of disadvantages, as has already been explained, is the earliest possible stabilisation of the currencies of the world.

It is also believed that the British producer is seriously handicapped by the great burden of debts, public and private, which he has to carry, whilst his foreign competitor is more or less relieved from such burdens by the inflation of the currencies which has taken place. The burden of public debt is better considered under the head of taxation, and we shall come back to it. If old capital debts have been largely written off by a process of inflation, this is of course an advantage for the producer, just in the

same sense as it is an advantage for him to be presented with a sum as a gift. But the advantage is only temporary. Every industry requires a continuous supply of capital both for maintenance and for extensions, and it is an economic necessity that an industry should pay full interest and sinking fund on this capital. Thus the disadvantage for the British producer, who has to supply interest as well as sinking fund for his old capital, is by no means so great as might be imagined. Still, under the pressure of the present difficulties, it may be necessary for a British firm to write down some old capital obligations. This is of course disagreeable, but after it has been done the undertaking should become quite sound and recover its normal power of competition.

When people speak of the advantages to production of the radical reduction of debts which is being attained by far-reaching inflation, they are very much apt to under-rate the very material disadvantages of such a process of inflation. It is quite absurd to assume that a country could gain lasting advantage for her producers, in the competition with other countries, by such an extremely unsound measure as the destruction of her own currency by aid of inflation.

It remains to discuss the question how far the British producer is handicapped by the heavy burdens of taxation he has to carry. This question is in many ways interwoven with the reparations question, and we shall therefore in this connection also have to take account of the bearing of German indemnity payments upon the relative power of competition of the industrial countries concerned.

It is naturally a very unpleasant outlook for the British taxpayer that he should be called upon to pay War debts, external as well as internal, while the Continental countries involved in the War simply do not pay their external debts, and by inflating their currencies reduce the burden of their internal debts to an insignificant fraction of what they originally represented. In wide circles it is thought that this will mean the hampering of British trade, and will put the British producer permanently at a disadvantage

as compared with Continental producers. Particularly it is thought that Germany will have an overwhelming advantage in competition in the world's markets, by having already practically cancelled her interior debt. If Germany were to be let off with the comparatively small reparations debt which at present it seems possible to exact from her, this, it is argued, would be quite intolerable for the British producer.

These arguments seem to carry such weight in very wide circles in Great Britain, that they stand in the way of such a treatment of the reparations question as would be regarded as most desirable from other points of view. Were it not for a fear of serious disadvantage to the British producer, most people in this country would probably be quite willing to accept a solution which would at the earliest date restore the buying capacity of the Continent, and thereby open the way for a recovery of the world's trade. In these circumstances a thorough discussion of the arguments referred to acquires a predominant importance. We have to make it clear whether these arguments are sound or not, and what practical conclusion can be drawn from them. As a small contribution towards such a discussion I venture to offer here some few observations.

First we have to consider the question : to what extent is additional taxation for payment of debts a real burden upon production ? The idea that taxes laid on producers must necessarily be added to the prices of the products, and particularly to the prices of the products exported, and thereby diminish the total volume of exports, is hardly in accordance with the facts. Employers have to accept such profits and workmen have to accept such wages as will make competition in the world's markets possible. The real inconvenience of taxation to producers arises when, as a consequence of this lowering of profits and wages, the supply of fresh savings is restricted and the efficiency of labour is lowered. These, therefore, are the points of view from which our question should be discussed.

The effects of taxation upon production depend to a certain extent upon the form of taxation. If, as in Sweden,

a heavy burden of taxation is laid upon limited companies, hitting them in their process of forming an income and preventing them from preserving the necessary means for the development of their undertakings, it is certain that production is hampered. It ought, however, to be possible to avoid such harmful forms of taxation, or at any rate to reduce them to a minimum.

The effect of taxation upon the productive capacity of the country depends also very much on the use made of the receipts of the taxes. If these are wasted in unnecessary Government expenditure, the savings of the people will be consumed, and the supply of capital will be so restricted that a sound development of production is thereby hampered. But if the receipts of taxes go to the service of an internal debt, a considerable amount of the money will probably be reinvested, *i.e.* put at the disposal of the country's capital market, and serve the further development of its production. If the tax is borne to a considerable extent by consumption, the sum of savings in this way restored to the capital market will perhaps come to even more than that which the tax has drawn from savings, and the tax will then to a certain degree work as a kind of machinery for compulsory saving. It does not seem unlikely that this will be the result of the extra taxation necessary for the service of Great Britain's internal War debt. In so far as this is the case the taxation may prove to contain at least one element favourable to the development of production and to the strengthening of the country's position in international competition. The unexpectedly rich capital resources which the London market has shown itself to possess in the last years could perhaps to some extent find their explanation in this way.

The service of the external debt of Great Britain is of course a very serious burden, but it is hardly a burden which hampers the development of British exports. In fact this debt in some way or other must have the effect of forcing British products into the world's markets. On the other hand, the payment of an external debt, in so far as the means are taken from savings, undoubtedly involves a real

loss of capital; but as against this loss must be set up a reduction of fresh investments abroad, the disadvantages to British producers are probably not so considerable as might be imagined.

On the whole the service of the War debt seems to involve much less direct burden on production than is generally supposed. A pernicious effect on production can only be expected if taxation brings about such a lowering of the standard of life of the workers as will diminish their efficiency. It is the lowering of the standard of life which should be looked upon as the real danger for the future of production.

Is it then not strange that just this lowering of the standard of life of the working classes in the case of Germany should be looked upon as a source of overwhelming strength in the competition in the world's markets? It is certainly much more natural and much more in accordance with actual facts to regard the alarming depression of the standard of life in Germany as a source of weakness.

It is hardly a sound argument to contend that, by wiping out her internal debt through a process of inflation, Germany has won a definite advantage in international competition. If this argument should induce other countries to follow a similar policy, the ultimate results might be very deplorable indeed. We know that inflation is an extremely pernicious process, and we must make it clear to ourselves that those countries which have been able to resist the temptation to inflation are thereby in a better situation than those which have not.

Finally, we have to answer the following question: Admitting that, as a result of the high taxation required for the service of the War debt, British production is put to some disadvantage in comparison with German production, can this evil be amended by imposing heavy reparation claims on Germany? If Germany sees her way to paying the reparation debt within a reasonable time, she will presumably make superhuman efforts to increase production and to force her export goods upon the international markets. The consequence will be an artificial

intensification of German competition. In such circumstances Germany will simply have to sell so much abroad that she gets the surplus over and above necessary imports which is required for reparations payments. The competition simply must be driven to the point at which it becomes successful. The idea that the heavy taxation made necessary within Germany would increase the cost of production and thereby hinder German exports involves a contradiction and is absolutely futile.

Thus, from the point of view of adjusting the conditions of international competition, the exacting of reparations is hardly a commendable policy. Financially it is doubtless an advantage to receive the payments, but protectionists do not demand reparations on this ground. They generally regard the supply of foreign goods at low prices as a disadvantage, and must consequently look with great suspicion on a supply of goods for nothing. I do not share this view. But if the solution of the reparations question is to be that France gets the reparation payments and England the artificially increased competition, it certainly seems very difficult indeed to see where the advantage to England comes in.

This analysis of the problem of finding employment makes the general character of the problem quite clear, and reveals its intimate connection with distinct and serious faults which have been committed, and are continually being committed. There is no way to recovery without acknowledging these faults. It is pure waste of effort and time to try to explain our present difficulties as a result of "trade cycles" or of some other mechanical influences which are beyond our power to control. Taking the world as a whole we are now—for good or evil—the masters of our own fate. The problem of unemployment can only be solved by definitely giving up the policy which is mainly responsible for the extraordinary growth of unemployment during the last few years. Instead of suppression and military occupations we must have real peace. Instead of the idea of enforcing payments by measures practically amounting to the reintroduction of slavery, we must go

back to the principle of free work, even if that should involve the writing off of considerable amounts of indemnities and debts which, as events have developed, have already lost any real value. Instead of the aggressive protectionism which developed during the War and after the War we must set up the old principle of free trade. Our minimum programme in this respect must be to come back at least to that amount of freedom of trade which we had in the world before the War. In addition, we must observe that free trade is inconsistent with a traditional and sometimes even artificial concentration of population in some small countries, and that therefore to the policy of free trade must be added a policy aiming at a more rational distribution of superabundant populations. We must particularly direct our efforts to the creation of the machinery necessary for exporting a considerable part of the yearly additions to the population of Europe, and at the same time for developing hitherto comparatively neglected natural resources in other parts of the world. Such work should never be allowed to cease as long as European populations continue to grow and as long as there are any fresh resources to develop.

THE EFFECTS OF CURRENCY INFLATION

Professor MORITZ BONN

THE question in what way inflation affects the competitive industrial position of a nation is really of a twofold character.

Inflation as a thought out, or not thought out, policy is always a temporary phenomenon. But the actual results of inflation, if practised on a large scale and for a considerable length of time, are anything but ephemeral.

I

As to the first aspect of the question, it may be admitted without strict qualifications that inflation, producing a quickly depreciating currency, is apt to give a premium on exports, in as much as there will always be an interval between the adjustment of wages to prices, however short that interval may be. It is bound, moreover, to wipe out debts, public debts as well as private debts, easing thereby the position of such enterprises as are encumbered by mortgages, or liable to pay taxes for the paying off of interest and sinking fund on the public debt. On the other hand, inflation acts as a bar to imports, making the financing of them difficult. It ruins the creditor class, who invested their money in gilt-edged securities. It not only destroys existing capital, it makes the formation of new capital impossible, in as much as the immediate spending of income is the best way of getting a real benefit from one's efforts. In that way it leads to over-consumption in an impoverished country. It drives away capital to foreign

countries, investment in foreign bills or securities being the only safeguard against depreciation. It destroys a nation's foreign credit. In fact, it undermines the three foundations on which modern capitalism is based: it destroys property, by way of an automatic confiscation, and with it the belief in the inviolability of property as an institution; it tears up contracts by presenting the debtor with the creditor's capital, ruining thereby a nation's trust in the sacredness of obligations, freely entered into; it prevents the formation of new capital, by putting a premium on spending and a fine on saving. It deteriorates a nation's morals by making business a sort of gambling. It leads to usury and to wrong accounting, to unceasing labour trouble,—for no machinery can be devised which could bring about the adjustment of wages to prices without friction. It leads to bad work, for labour cannot enjoy the fruits of an extra effort. There will be scarcity of goods in the long run, high prices, and wages with ever-decreasing purchasing power.

As a policy inflation is bound to be purely transitory, at least in a highly efficient, industrially organised commonwealth. The day is bound to come when wages are rising more rapidly than prices, when credit is unobtainable at home and abroad, when industrial goods cannot be sold at home, as there is no market, and agricultural commodities are not offered because the farmers refuse the depreciated money. There are no imports, because exchange is too high, and no exports, because owing to the rise in the cost of production prices abroad are no longer remunerative. The nation is drowned in a flood of paper money, the issue of which is driving up prices and wages; there is at the same time a comparative dearth even of such money, as the printing press cannot turn it out to the huge extent needed by the expansion of the level of prices. The experiences of Germany during the third quarter of last year (1923) have shown once again that in its later stage inflation is bound to topple over. In that stage the process of economic dislocation and social dissolution is sure to begin. As long as it goes on the nation is not

a serious competitor for exports, nor can she be a paying customer.

Sooner or later stabilisation must set in. The real question is: What will be the position in regard to industrial competition of a nation which has gone through a lengthy period of severe inflation?

Is that nation, as a nation, richer or better equipped than it was before? Will it be capable of producing more goods, and of producing them more cheaply, than its competitors?

II

Inflation in Germany has wiped out the bonded debt of German industrial concerns. This debt amounted to about 3.5 milliard gold marks for the different incorporated societies of pre-War Germany, to which must be added the value of the mortgages registered on their property. As far as industrial enterprises are concerned, the value of these mortgages is probably not very considerable. But the sums lent on house property in urban areas and on land used for agricultural purposes are very great indeed. The different sorts of mortgage banks owed about 16 milliard gold marks. The total value of all mortgages in Germany has been estimated at 30 milliard gold marks, whilst the total debts owed by the different classes of people liable to the capital levy of 1913 were about 40 milliard gold marks. All this debt has practically been wiped out,—though a good deal of it has been paid back at a time when the mark was still of some value.

As far as this burden was carried by German industry the latter has certainly been relieved of it. Assuming a total indebtedness of about 5 milliards and a rate of interest of 5 per cent, this would constitute an annual saving on interest of 250 million gold marks, or about 12.5 million pounds sterling. A further benefit accruing to industry was the cheap credit it enjoyed for a long time, as the Reichsbank, desirous of keeping down the rate of interest on treasury bills, stuck to a discount rate of 5 per cent. It granted, moreover, liberal credits at a time when

the value of the mark was comparatively high, whilst it was repaid in depreciated marks, thus making a considerable present to the borrowers. This has been a fairly late development. In February 1922 the total amount of trade-bills held by the bank was but 1·6 milliard paper marks ; it had risen to 6 billions in July 1923. The gold value of these credits was, however, not very considerable : on July 31 it amounted to but 6 million gold marks.

Another benefit accruing to German industries from the depreciation of the mark resulting from inflation was the chance given to them of practically passing their dividends. The public were buying industrial shares regardless of dividends, as a means of safeguarding their money against depreciation. They were quite satisfied if these shares rose automatically with the fall of the mark, or if they could get cash by selling an option on the issue of new shares. Prices were very low : the average price of thirty industrial shares was about 46 per cent of its pre-War price on August the 6th. But even at that low rate dividends actually paid amounted to but a few pennies per 100 gold marks. This does not mean that there were no profits, but merely that no profits were distributed. The earnings were carried to reserve account, to depreciation, or were reinvested in the plant, at a temporary loss to the actual shareholder.

Taxation worked on similar lines. The legal rates of taxation have been very high. But until August 1923 there has always been a considerable interval between the date of assessment and the date of paying. This being so, the gold value of the taxes actually paid was but a small percentage of the gold value of the taxes assessed, in as much as the depreciation of the mark annihilated the value of the amount due. Furthermore, in a commonwealth with a rapidly decaying currency, monopoly prices are the rule, as there cannot be foreign competition. In such circumstances the incidence even of direct taxation cannot be foreseen. Most taxes, including the income tax, are shifted to the consumer by a corresponding rise of prices.

III

But there is another side to the matter. One of the great advantages German industry enjoyed before the War was the size of the home market. For most industries the home market was far more important than the foreign market. This big, fairly highly protected home market enabled Germany to carry on production on a very large scale, thereby reducing the cost of production per unit. Germany, so to speak, exported her surplus; prices at home sales were high enough to cover all general cost of production (overhead expenditure), enabling manufacturers to sell cheaply abroad.

The home market is still protected. There has been a huge concentration of industry in all directions, so that monopolies are very strong in present-day Germany. But the home market has been ruined. The wiping out of industrial and agricultural debts, to which must be added the cancellation of state and municipal debts, has practically destroyed the purchasing power of what may be called the middle class. The total capital values affected may well approach 150 milliard gold marks, equalising at 5 per cent a spending power of 7·5 milliards a year. These figures are swelled by the loss of income on house property. On account of the control exercised, rent proper, in paper marks, on the 11th April 1923, was but 364 times the pre-War gold rent; there was practically no income from house property; apart from such houses as are so heavily mortgaged that the owner has recouped himself at the cost of his creditors for the loss which he has to bear in the interest of his tenant, householders have been sacrificed. A value of another 60 milliard gold marks has thus been affected very adversely, comprising an income at 6 per cent of about 3·6 milliard gold marks. To this must be added the contraction of the home market through loss of territory and through the confiscation of German property in enemy countries, for which the German Government were unable to compensate their nationals.

Part of this purchasing power has no doubt been merely

transferred from one class to another. In this process it is bound to change its nature. An industrial enterprise whose expenditure has decreased through the disappearance of its bonded debt may use these savings for enlarging its plant ; but it will not have the same demand for goods ready for consumption its defrauded creditors were in the habit of exercising on the market. Part of the formerly existing purchasing power was practically lost : the farmer did not spend the interest on the mortgage he was allowed to retain on the consumption of the same goods his creditor used to buy : as he did not need to earn any longer the money set aside for paying his quarterly instalments, he sold a smaller share of his produce, and either grew less food or consumed a greater part of it on the farm. In either case the demand for manufactured goods was diminished. And the income of which the large class of house-owners has been deprived did not in most cases accrue to their tenants. As rent was kept artificially low, wages were lowered *pro tanto*. This might have enabled German industry to keep down prices. These low prices redounded to a small degree to the benefit of the defrauded classes in their capacity of consumers ; as far as exports were concerned, part of the income of the German house-owners was presented to the foreign consumer.

As a result of this process of scattering accumulated capital, quite a new stratification of social classes and incomes was taking place. For some time the farmer and the manual worker, especially the unskilled worker, have improved their position relatively to that of other classes. But the purchasing power of the nation as a whole has greatly decreased. The imports of all sorts of foodstuffs have fallen from 11·7 million tons in the last pre-War year to 5·07 million tons. Raw materials have fallen from 60 million tons to 38·9 million tons. This being so, the advantages brought about by the improvement and the enlargement of plants are probably more than offset by the impossibility of using the plant up to its full capacity. Even if it were possible to maintain exports at a pre-War level, the reduced consumption at home must bring about

a considerable restriction of the output. Now exports too have been greatly reduced. Total exports declined from 73·7 million tons to 21·6 million tons; the exports of finished manufactured goods fell from 9·3 million tons to 5·8 millions. This being the case, the cost of production per unit actually sold must be very high. Though it may be possible to protect the home market against all sorts of foreign competition and thus exploit the home consumer, the total benefit which can be got in this way will be greatly reduced by the limitation of purchasing power, brought about by inflationist confiscation. It remains to be seen whether the advantages of an improved plant will not be more than offset by the bad effects of a decreasing turn-over. As long as inflation lasted, this was not clearly discernible, as the fear of further depreciation brought about over-consumption, whilst each new fall in the mark acted for the time being as a premium on exports. Things have become different since some sort of stabilisation has been reached.

IV

The process of inflation has wiped out state debts and municipal debts. The taxpayer has been freed from the obligation of paying interest on them. This again is a considerable saving from which all taxpayers derive some benefit. But it is a clear financial benefit, only when the bonds or notes wiped out are in the hands of foreign investors. As far as that goes these investors have presented Germany with goods or cash for which they have received worthless securities. The case of foreigners who, like many German-Americans, invested in German bonds from a feeling of trust in Germany, and not as a mere speculation, is very sad indeed. Its importance as far as a saving in taxes is concerned is probably not very great. But the wiping out of loans and notes, which were placed at home, affords considerable relief to the taxpayer. The capitalised value of that income which the taxpayer is allowed to keep is, however, taken away from the defrauded creditor. A large class of people (the owners of private bonds must be

included) is incapacitated from contributing anything to the state, nay, many of them have to be provided for by pensions. The national income of the commonwealth is not increased through mere redistribution. The accumulated capital of the investor has been scattered in bits amongst the different classes of producers, who may, or may not, re-convert it into capital. The class living from the savings of the past has lost its income ; it will have to be kept alive somehow by the earnings of the classes who have despoiled it.

Though the state has been able to get rid of its old obligations, its total income from taxes was not sufficient to provide for its reduced expenditure. If the expenditure on the Ruhr is left out of account, the total spendings of the State counted in gold were probably lower than they were formerly ; but the same holds good of the incomes, from which ultimately taxation must come. The total taxpaying capacity of the commonwealth has not increased. Even if the total expenditure, after currency reform has been completed, were somewhat reduced, most of the burdens of taxation, especially municipal taxation, must be borne by industrial concerns.¹ The general investors, as taxpayers, have ceased to exist ; the same holds good of the owners of house property, until de-control has taken place. They will be a source of expenditure, where they were before a source of income. The cost of running the state and the municipalities must be borne by the producers. After stabilisation they will not be able to shift that burden by adding it to their prices, as they have been doing whilst enjoying a complete monopoly ; even if they succeeded in doing so, they could but partially recoup themselves : as the mere consumer has ceased to exist, and as wages do not afford a broad margin over the bare necessities of existence, any increase of prices due to taxation must lead to an increase of wages and a generally high level of the cost of production.

¹ The total expenditure for 1924 is estimated at a little above 5000 million gold marks ; this includes a subsidy of about 1800 millions to the States, but no Reparation payments.

After stabilisation Germany is sure to be saddled with considerable annual reparation payments. These payments will not be essentially different from annual payments on foreign loans for interest and sinking fund. They can only be borne by taxation, reducing home consumption *pro tanto*. This will bring about a reduction of imports, as far as home consumption is concerned, and an increase of exports due to the lessened consumption of home-made goods. The German home market will be restricted for German goods as well as for foreign goods.

V

When stabilisation began, Germany had become a poor country as far as capital is concerned. The total capital loss suffered by her from the capital payments on account of the Peace Treaty cannot be less than 30 milliard gold marks.¹ The wiping out of all debt obligations by the depreciation of money has destroyed "mobile capital" not short of 150 milliards. Part of that capital has no doubt been converted into "fixed" capital, but another part has, so to speak, disappeared. The standing capital of the nation, as embodied in industry and to a lesser degree in agriculture, has perhaps increased, provided the 60 milliards of house property get back their competitive value after de-control,² but the working capital has been greatly diminished. Part of that working capital took refuge abroad on account of the fall of the mark. Germany, a country devoid of working capital, has thus become the creditor of nations whose financial position is far better than her own. Part of that capital may return when a complete settlement has been reached, but part of it will remain abroad if taxation in Germany is heavier than taxation abroad. On the other hand, the low prices of real estate in Germany, and the

¹ This figure stands about halfway between the calculations of the German Government and the accounts of the Reparation Commission.

² Rents have been raised to 50 per cent of their pre-War level; they are subject to heavy taxation; moreover, for many years repairs have been neglected.

low quotations of shares of industrial companies, have induced foreigners to invest there; a considerable part of the marks in the hands of foreigners have returned to Germany by way of being invested in houses and shares.

The dearth of working capital has been hidden for a long time by the artificial ease of the money market, brought about by new inflation, whenever prices have risen considerably. Notwithstanding this, rates were very high. The rates for daily money for first-rate concerns had gone up to 2 per cent a day and more, or 720 per cent a year. The official bank rate was 90 per cent. But this had little to do with the real price of capital. It was merely an insurance premium which the lender insisted upon against future depreciation of the mark. Even after stabilisation has been achieved, the rates of interest are bound to be high from want of capital: the deposits in the six big Berlin banks were about 1,700,000,000 paper marks on December 31, 1922, or 850 million gold marks; the same banks held about 5058 million gold marks on the 31st December 1914. When things were settling down after stabilisation was under way there was a huge demand for credits, and the rates of interest are extremely high. Twenty-four per cent per annum is quite a reasonable rate. The fixed capital of industry and agriculture, which is at present pretty free from debt, may be used as security. The value of that fixed capital will, however, depend entirely on the earning capacity of the plant. That earning capacity will be decided by the scope of sales abroad. These sales abroad will be affected by the cost of production. This cost of production will be favourably affected by the wiping out of old debts; it will be adversely affected (a) by the limited scope of sales at home; (b) by the high rate of interest; (c) by taxation falling entirely on "production."

VI

During the period of inflation wages in Germany have been considerably below wages in countries competing with her industrially, the margin between the different levels

being much greater than in pre-War days. This was partly due to the fact that no system can be devised which can adapt wages to prices immediately. A rapid fall of the mark not followed immediately by a corresponding rise in paper mark wages would greatly reduce the gold value of German wages for the time being, and no doubt enable employers to make a temporary extra profit. But the chief cause of the comparative lowness of wages was the considerable margin between the level of prices at home and their level abroad. In June 1923, for example, the index numbers for wholesale commodities (calculated in gold by the same method) were 74 for Germany, 143·1 for England, and 136·4 for the United States. As the level of prices in Germany was much lower than the level of prices abroad, the purchasing power of a low wage in Germany need not be much below the purchasing power of a far higher wage in England. But the low wage in Germany would enable the exporter, who sold goods in a competitive gold market, either to pocket a much greater percentage of the price as a profit, or to sell his goods far below such competitive sales as would be remunerative to his foreign rivals.

The main causes for the low level of prices in Germany were the control of houses, the bread subsidies, and the lowish rates of the railways and the post office. Before the War, the working man spent about 20 per cent of his income on rent. For March 1923 this percentage had fallen to 0·90 per cent. At that time the average hourly wage of an unskilled labourer was about 1200 marks ; if he had had to pay competitive rent, as he used to do before the War, whilst maintaining his standard of living, his wages would have varied between 1500 and 1800 marks. As an unskilled labourer in Germany drew about 71 per cent of the wages of an English labourer in May 1922, this difference was almost entirely due to the fact that he lived "rent free."

Nearly all advantages existing in Germany through the artificial lowering of prices and the cost of living disappeared during the last phase of inflation. The direct bread subsidies had practically ceased ; railway rates and

post office rates were being automatically adapted to the course of the exchange. The very low rates at which indirect taxation stood were in process of being raised, for without such measures expenditure could not be reduced, and revenue could not be increased; the budget could not balance. In the last months, moreover, wages had risen by leaps and bounds, following prices quickly, and in their turn driving up the level of prices considerably.

One element in the German cost of living, house rent, was and is still rather low, but it cannot in the long run be kept down to such a rate as to make house property permanently valueless. The class directly interested in low rents were not the workers, but the remnant of the middle class, who were housed very cheaply and who by subletting furnished rooms eked out a precarious living. The chief profiteers have been the employers of labour, who were enabled by control of houses to pay lower wages. As they opposed control on principle, they were advocating the de-control of houses. This is bound to come,—as a general system of socialism seems out of question to-day. Broadly speaking, there was a strong tendency of German prices to adapt themselves to world market prices during the last phase of inflation. Whenever the mark remained stable for some time, German prices, calculated on a gold basis, were quickly tending towards assimilation. In January 1923, for example, the German index in gold was 65 against 138·6 in England; in March (after eight weeks' stabilisation) it was 96·8 against 145·8. After stabilisation, when competitive forces are at play, this development is bound to come, though protection and other causes (transportation) may bring about some more or less permanent minor differences between the price levels of different countries.

In the summer of 1923 the prices of some of the basic commodities like coal and iron, which were formerly a good deal below world market prices, were approaching and even exceeding them. In July German coal cost 18·9 gold marks the metric ton, English coal 20·83 gold marks; during the same week German pig-iron sold at 111·46 gold marks the ton, and English pig-iron for 103·28 gold marks. This was

not an entirely new development : whenever the mark was steady or improving, German industrialists complained that they could not face foreign competition. No doubt this complaint was partly due to their desire to pocket the easy paper profits continued inflation was expected to yield. But the fact remains that, notwithstanding the double influence of control and the temporary premiums on export, the price level and the wage level in Germany were becoming internationalised even before inflation came to a standstill.

VII

It is rather significant that during a period when low wages and premiums on export gave German industries a good many advantages, which were increased by low actual taxation on industrial workers and employers and by low transportation rates, German exports did not swamp the markets of the world. What are the causes ?

To begin with, most German industries working for export had to depend on raw material imported from abroad. This raw material had to be paid for in gold ; owing to the bad state of German finance, the costs of procuring it were probably higher than those which had to be paid by Germany's chief competitors. This being so, the item of wages was of far less importance, as far as costs are concerned, than it was in the past. In a spinning mill, for example, the percentage due to wages and salaries fell from 5·5 per cent of the selling price for the year 1914 to 2·14 per cent in 1922 ; in a weaving shed the decrease was from 10·4 per cent to 3·8 per cent.

Naturally this does not hold good of industries working with home-grown material. But everywhere complaints were loud that the cost of unproductive labour was increasing faster than that of productive labour. This complaint was well founded. Collective bargaining was the rule in Germany. But owing to the rapid change of prices, no wage agreement could be made for any length of time ; continual readjustments were the order of the day. The time and energy wasted by employers, employees, and

government officials on such unavoidable adjustments was simply stupendous. The amount of unproductive work thrown on all accounting establishments, especially the banks, was enormous. Half the German people, a wit rightly observed, are kept busy by calculating the wages due to the other half. As long as the depreciation of the mark did not come to a stand-still, this wastage was bound to go on.

Employers complained about the inefficiency of labour : no doubt the available number of skilled labourers had decreased considerably on account of the War ; the influx of unskilled labourers to make up for this deficiency, and to provide the needed extra labour brought about by the eight-hour day, had certainly reduced efficiency in many cases, though detailed inquiries have shown that in many other cases efficiency had not diminished. A depreciating currency is, however, an obstacle to all efficient labour. The working man has really not much incentive to extra work when he knows that the purchasing power of his wages is bound to evaporate, whatever system of settling and paying wages may be chosen. Employers were accusing the eight-hours day, which was the law of the land, as a great obstacle to low working costs. Where it is not accompanied by intensified production, it does no doubt add considerably to the wage bill, counteracting to a certain degree the influence of the fairly modest individual wages: if five working men do the work formerly done by four, the total wage bill will be 20 gold marks, though the five may get but 4 gold marks apiece, whilst formerly four men got 5 marks each.

There can be no doubt, moreover, that the enactments of the commission for demobilisation, which were in force until November 1923, and which compelled the employer to divide the work amongst all his workmen before he dismissed any, interfered with the efficiency of work. But the chief cause why comparatively low wages did not bring about cheap prices for manufactured goods and an increased export was the fact that the total output was too small in relation to the big increase in all sorts of overhead

expenditure. As a result, manufacturers, enjoying monopoly prices at home, preferred big profits on a small turnover to small profits on a huge sale.

VIII

The eight-hours day and the general wastage of labour and supervision, which the German employer is never tired of complaining about, have prevented the spread of unemployment in Germany. As late as March 1923 (after the invasion of the Ruhr, during a period of temporary stabilisation of the mark) the percentage of unemployment was but 5·7 per cent of the membership of trade unions ; but the average of short-time workers was 24·2 per cent, and in some unions it was as high as 66·9 per cent. The direct cost of unemployment was fairly low. But the indirect cost paid by the middle class through the inflation tax has been enormous. House control has kept individual wages low, and enabled the employer to use far more labour than he really needed, without raising the cost of production above that of his competitors. The deficit of the government railways and the post office has been defrayed by the issue of paper, which expropriated the middle class, whilst agriculture and industry for the time being succeeded in shifting taxation. Reparation, too, was paid in paper marks to the German producer ; people were kept busy with the disbursements practically paid for by the former investor. The cost of preventing unemployment in Germany and of paying for it was thus not borne by the general taxpayer, but by the owner of gilt-edged securities and the owner of houses.

There expropriation is completed. The time when it was easy to make profits by a quickly falling exchange is over. It is no longer possible to throw the burden of the State on the shoulders of those who, up to now, have paid the inflation tax. Stabilisation has come, and with it, gold prices and gold wages.

Stabilisation was bound to put an end to the artificial creation of purchasing power, which so far had hidden the

fact that the home market was already greatly reduced. It brought about a very severe contraction of it, especially as financial reform was impossible without severe indirect taxation. This in its turn is bound to curtail the spending power of the working class. If the rate of conversion of paper mark into gold mark had been favourable to the paper mark, the existing paper mark wages, when reduced to gold, would have been above the level of similar wages abroad. A severe deflation crisis would have ensued. To avoid that danger the paper mark was converted provisionally at the average rate ruling at the time of conversion. Notwithstanding this precaution a severe crisis followed.

Severe taxation greatly reduced the spending power at home. Employers had to give up the fantastic methods they had used in many cases for calculating costs, piling up all items which "traffic would bear" during a monopolistic period. They threw the burden on labour. Superfluous labour was dismissed; unemployment on a large scale was rife; wages were reduced. With 5 millions unemployed and a low ebb in the funds of the trade unions, the working class could not offer resistance to this lowering of wages. As a result, the turn-over at home will become smaller than it has ever been. The fact that the works are equipped for a much larger production will not guarantee cheapness; for as the home market is greatly reduced and as the foreign markets are limited, the cost per unit is bound to be high, whatever may be the cost of labour. As a result, a serious "writing off" of many an industrial concern is unavoidable. It is reflected in very low quotations of industrial shares. Manufacturers will have to learn the lesson that the value of a plant is not so much determined by the cost of its erection as by the capitalised value of the sales effected by it.

Imports into Germany may, in the long run, be further reduced; for heavy taxation and unemployment curtail the purchasing power of a nation, quite as much as does inflation—though they may do it in a different way. By and by the under-consumption of home produce must lower prices and bring about a chance of increased exports—

provided there are markets for them. It is quite possible that after definite stabilisation Germany will be in a position similar to that of England, being unable to work her plant at full speed, as the total number of possible customers is not big enough for the world's industrial productive capacity.

The payment of reparation, which is bound to come, will aggravate this problem : at home it will mean increased taxation, and with it decreasing consumption of home commodities and imported goods ; abroad it will mean the necessity of exporting goods and services without corresponding returns. The outcome of this may be another and a permanent severe reduction in the standard of living, as the only method of producing an exportable surplus of the size needed to pay off these obligations. In that case Germany might have little unemployment at home, but very low wages for the entire working class, and fairly cheap costs of production on account of that low standard. She would be no good as a market of consumption for commodities from abroad, and she would undersell her competitors abroad.

EXPORT OF CAPITAL IN RELATION TO UNEMPLOYMENT

By C. K. HOBSON

THE purpose of this memorandum is to consider three aspects of the problem of oversea investment, viz.—

- (1) The functional connection between changes in the amount of capital exported and employment, with special relation to the existing depression ;
- (2) The way in which the development of other countries with the aid of British capital reacts upon economic conditions, and consequently upon employment in Great Britain in the long run ; and
- (3) Whether the exercise of governmental control over the export of capital is desirable or practicable.

I. Functional Connection between Export of Capital and Unemployment

During the century which preceded the Great War the economic system of this country was so fashioned as to permit and encourage the investment oversea of a large and continuous stream of capital as a normal activity. An essential feature of this evolution was a vast expansion of industries which sought to dispose of their output of goods or services outside the United Kingdom. These industries included not merely the large exporting industries so-called, some of which (notably the cotton industry) sold much the greater part of their production oversea, but also the shipping industry and the industries of banking and

insurance, which performed substantial and valuable services on behalf of the inhabitants of other countries. Another service which entered more and more largely into account was the service represented by the use of capital invested overseas in the past, a service remunerated by the payment of interest or dividends. The aggregate value of the goods and services supplied commercially in these various ways to the inhabitants of other countries nearly always exceeded the value of the goods and services which the inhabitants of this country obtained from overseas. During the recent War this was not the case, if we exclude the value of goods and services supplied to our allies and paid for out of Government credits; but since the end of the War there has again been an excess in the value of goods and services supplied over goods and services received.

The extent of the excess value of goods and services supplied in commerce (which will be referred to as "sales") over those accepted in commerce (which will be referred to as "purchases") during any period is the measure of the export of capital—interpreting this expression widely so as to include at the same time money placed on deposit in overseas banks, temporary advances by British banks or merchants to customers abroad, capital invested temporarily or permanently in British or foreign companies carrying on their operations overseas, and loans to overseas Governments, municipalities, etc. While export of capital thus balances our international trading account, it is not to be regarded (except possibly in a secular sense¹) as a "balancing item." The various other items in the account have on the whole to accommodate themselves to the export of capital as much as the export of capital has to accommodate itself to them. It is no doubt true that in

¹ The export of capital in such volume as at present, or in the even larger volume of pre-War days, may not be a permanent feature of our trade balance. It might be squeezed out by a gradual decline of prosperity or increase in the standard of consumption at some time in the future, which would make it impossible to save much for investment. But in order to function smoothly in existing circumstances our economic system seems to require an export of capital.

ordinary circumstances small uncovered differences between the value of the sales and purchases items in the account can readily be adjusted by means of temporary loans or advances, while similar adjustments may take place by means of arbitrage transactions between different Stock Exchanges, when movements in exchange point to the existence of an unsettled margin between international buying and selling operations. But such methods of adjustment are adopted only in so far as they are easier than other methods, and it must be borne in mind that the more permanent forms of investment oversea, which represent the bulk of capital exports, cannot be hastily arranged in response to a momentary lack of adjustment.

At some times, nevertheless, the amount of capital exported seems in the main to be controlled by the other items in the trading account, while at other times the export of capital in its financial aspect seems largely to control them. The former is apt to be the case in times of industrial and commercial prosperity, when the export of capital is limited by the fact that the value of goods produced and exported, of shipping and other services rendered, cannot be increased beyond a certain point in relation to goods and services received. At such times the opportunities for profitable investment may appear to be almost unlimited, and finance imposes no great obstacle to the expansion of oversea investment; the obstacle is imposed rather by industry and trade. On the other hand, in times of depression the difficulty may be on the side of finance rather than of production and trade. The lack of promise or certainty in the outlook makes investment unattractive to those who control the flow of capital, and this makes it necessary to contract the sale of goods and services relatively to purchases of goods and services.

Whether as a cause or as a consequence of variations in the rate of investment oversea, the excess of sales over purchases is continually changing owing to modifications on both sides of the account. The general tendency has been for the value not only of sales but also of purchases to increase, larger supplies of foodstuffs and materials in

particular being required to meet the needs of our growing population and industry. There has been a marked tendency for fluctuations from year to year to affect both sales and purchases in a similar sense, no doubt in the main because a falling off in exports reduces requirements for imported materials. On the whole, the general tendency for imports to increase was subject to fewer exceptions during the years 1870-1913 than the tendency for exports to increase (twelve years compared with seventeen years), and the average extent of movement in the value of exports from year to year (5.92 per cent) was greater in proportion than the average movement in the value of imports (4.55 per cent).

There is an unmistakable tendency for the excess of sales over purchases—that is to say, for the export of capital—to be greatest during years of industrial and commercial activity when unemployment is at a low level. It is at such times that most capital can be accumulated, and if desired exported. Nevertheless, a high rate of export of capital and a low rate of unemployment, and *vice versa*, must not be too closely linked together. A low rate of unemployment is consistent with a low rate of export of capital, if some special internal demand for goods or services causes either a great increase in requirements of imported goods, or diversion of labour hitherto engaged in producing goods or services for the oversea market to the production of goods or services required at home. The increase of home demand may take the form either of an increase in the demand for capital goods for investment or of goods or services for consumption. The Great War constituted a striking example of the latter, the special demand for goods and services for the purposes of the War being so great that there was an acute shortage of labour simultaneously with the cessation of the export of capital. But even a special internal demand for goods or services may fail to absorb workers who are more or less specialised in producing for export. For example, an exceptional demand for building labour can scarcely relieve unemployment in the cotton industry.

Unemployment occurs among workers producing goods or services for sale overseas when there is a sudden falling off in the overseas demand unaccompanied by a corresponding increase in the home demand for goods or services which can be produced by the unemployed workers, and such a falling off in overseas demand is apt to be associated with, and may be caused by, a reduction in the rate of export of capital. Unemployment may also occur when there is an increase in the importation of goods which compete with British-made goods. It would seem, however, that as a rule by far the greater part of any unemployment connected with fluctuations in the export of capital falls upon industries and services (notably shipping) which produce for an overseas market, together with other industries closely bound up with them. Though an influx of goods which compete with British industries may cause considerable dislocation in the labour market here, yet if competition is prevalent in the internal market it is likely to be still more serious in the overseas market. The surface of effective competition between British industry and foreign industry is on the whole also more restricted in our import trade than in our export trade, for there are many imported goods which this country does not and cannot produce at all or in sufficient quantities, while the goods which we export can almost all be produced elsewhere. Thus it is the industries which produce goods or services for sale overseas that are most affected when investment overseas is quickly diminished because of political or economic uncertainties in the outlook, or when an undue rise of prices makes it difficult to sell goods and services and thus reacts upon the export of capital.

Synchronisation of depression in the exporting trades and in the export of capital may be noted at the present time. In 1913 the export of capital is generally put at about £200,000,000, the equivalent of which at present prices would be over £300,000,000. Yet, according to an estimate published in the *Board of Trade Journal* of 31st January 1924, the export of capital in 1923 amounted to only £97,000,000. From the point of view of trade the counter-

part of this great diminution in the export of capital was a decline of some 7·0 per cent compared with 1913 in the actual volume (as distinct from the value) of our imports ; and a decline of 21·5 per cent in the volume of exports, including re-exports. As usual, therefore, imports and exports have been affected in the same sense ; but exports have been affected more markedly than imports by the reduction of the export of capital. Shipping earnings, though nominally larger in 1923 than in 1913, were smaller in purchasing power ; while income from capital invested overseas in the past was smaller nominally and *a fortiori* smaller in real value.

There are two outstanding reasons and some reasons of subsidiary importance for the existing depression in the export of goods and of capital.

The export of goods is probably checked to a material extent by the high level of prices asked for exported manufactures. The prices of these are considerably above the general level of prices for raw materials in the wholesale markets, as is proved by certain calculations, the results of which have been published in the *Board of Trade Journal*. These indicate that prices of British-produced goods (mainly manufactures) exported in 1923 showed an increase of about 90 per cent as compared with 1913, while prices (mainly of foodstuffs and raw materials) in the wholesale markets during the year were only 59 per cent above 1913 prices. It is no doubt true that the values of exports are inflated by the high prices of cotton and wool, which enter more largely into the export trade index number than they do into the index of wholesale prices. But this accounts for only part of the difference.

The export of capital on its financial side is checked by the prevailing political and economic uncertainty in most parts of the world, which makes those who have capital to invest loth to embark it in the creation of new enterprises or the extension of existing enterprises. The financial position of existing concerns is too bad to make additional investment attractive.

These two factors—the high price of exports and the

state of political uncertainty—work hand in hand in checking recovery in the volume of exports and in the export of capital. Behind them is the possibility that the volume of saving and the proportion of newly accumulated capital available for investment overseas may not speedily regain pre-War dimensions. The atmosphere of war was unfavourable to thrift, and it would seem that as a result of the War the distribution of incomes may have been to some extent altered, to the advantage of classes which have not been in the habit of saving much, and to the disadvantage of those who saved a good deal. This of course may not be permanent, and even if it is there may be a considerable growth of the habit of saving among those who have not hitherto saved. An increase of output, resulting from the wheels of industry and trade being set going again, would also certainly cause some increase in the accumulation of capital, and the increase would be the greater in so far as improved methods of production and of distribution were put into practice. On the other hand, the demand for capital in connection with improvements and developments (*e.g.* housing) at home seems likely to be greater than before the War, so that it is perhaps improbable that the export of capital will for some years attain pre-War volume, even if it attains pre-War nominal value. But such a volume of capital exports is not required to enable our exporting industries to become fully active again. It has to be remembered that we shall certainly need to purchase more from overseas than before the War to meet the needs of our increased population, so that a volume of sales equal to the pre-War volume will denote a smaller export of capital. Moreover, some increase in exports of goods and in shipping services will be required, to balance the falling off which has occurred in the real value of our income from capital invested abroad in the past. A comparatively small increase in the export of capital is probably all that would be necessary to enable our export industries in their present development to become fully active, and there is no reason to fear that scarcity of capital will stand in the way of such an expansion of overseas investment.

If the high cost of exported goods could be reduced, and the exceptional political and economic uncertainties which at present restrict investment on the financial side removed, there would be a rapid recovery of industry and trade, especially in the export branches, and a marked increase in the export of capital. The problem of unemployment would be in a large measure solved, except in so far as it depends upon special circumstances peculiar to particular trades. The cotton industry is likely to be hampered for some years to come by shortage of raw material, while the position in some other export markets is affected by the growth of hostile tariffs, or by the impoverishment of oversea customers.

A reduction in the cost of export goods is perhaps largely a question of time, and no quick remedy seems to be possible. An increase in the volume of production might itself help by lowering overhead costs, but to a considerable extent there must be a further process of adjustment in the exporting industries themselves, or in other industries whose goods or services are used by the exporting industries.

As regards the financial obstacle to recovery, a good deal could be done through the assumption by the State of special risks attendant upon investment. Something has already been accomplished in this direction by the granting of Government credit for exports, by the guaranteeing of approved export bills, and, under the Trade Facilities Act, of loans to Governments or other bodies, where the proceeds were to be used in connection with the carrying out of any capital undertaking or for the purchase of British goods required for such undertaking, and the application of the loan in the manner proposed was calculated to promote employment in the United Kingdom. There can be no doubt, however, that in existing circumstances an extension of the policy embodied in the Trade Facilities Act might have excellent results in reducing unemployment. Suitable schemes for oversea investment (*e.g.* railway building in the Dominions, Protectorates, or Crown Colonies) might be prepared if private schemes were inadequate, the object being to create immediately such

capital works as are likely to be required when trade revives. The importance of doing everything possible to promote the growth of raw cotton, and some other materials of which there is an actual or prospective shortage, should not be overlooked.

While the fact that our industry is largely organised for export renders it necessary that schemes of oversea investment should be encouraged for the purpose of reabsorbing the unemployed into industry, it is not intended to suggest that encouragement ought to be given solely to oversea investment. It would certainly pay this country to put a good deal of capital into the improvement and modernisation of its industrial plant, its railways and ports, not to mention its housing, so that when conditions on the Continent become more normal our industries and work-people will be able to compete on equal terms.

It does not appear to be essential to stipulate that the proceeds of loans guaranteed under any scheme for encouraging oversea investment should be expended in purchases in this country. Such a policy may stimulate particular industries; but if borrowers be allowed to buy in the cheapest market, the export of capital will stimulate the production of all such goods or services as are most readily acceptable to oversea purchasers.

II. Relation between Export of Capital and Employment in Great Britain in the Long Run

The advantages which a country primarily industrial and mercantile derives from the opening up of new sources of supply of foodstuffs and raw materials need not be elaborated. But for the development of North and South America, Australia, India, and other countries, Great Britain would not have been able to support in comfort more than a fraction of her present population, and her industries could not have approached their present size. The export of capital enabled her to dispose of a rapidly increasing output of manufactured goods, while continually extending the area of supply for foodstuffs and materials

and the means of transport required to bring them to this country.

This stage of development has, however, in some parts of the world been followed by another stage, in which the advantages accruing to the United Kingdom from oversea investment are more problematical. For some countries opened up with British capital have not only grown very rapidly in population and wealth, but have sought to build up manufacturing industries of their own, usually behind the barriers of a tariff which makes the entry of our goods difficult. The most striking example is the United States, which was largely opened up by British capital. For many years the United States was by far the most important supplier to this country of foodstuffs as well as of many raw materials, but, since the beginning of the present century, at any rate, signs have been multiplied that that phase is coming to an end. The growth of population in America had been so great that there was beginning to be a smaller amount of foodstuffs available for export after satisfying domestic requirements; and as the better and more accessible land had already been brought into cultivation, while some of the prairie lands were becoming exhausted under the prevalent system of farming, it was more and more difficult to increase supplies. Though we were in a position, so long as we held large investments in the United States, to call upon her to furnish us with supplies, we were not able to control the price; and this was tending to rise against us.

Meanwhile the United States had, during the century preceding the outbreak of the Great War, developed manufacturing industries of her own, and the goods representing new British capital invested in American railways, for example, had for a long time been almost entirely obtained from native factories. United States manufacturers were in some directions competing with British manufacturers in the world's markets.

The course of events in America shows signs of being repeated in various other countries, such as Canada, Australia, and parts of South America. Local industries

were established in many cases before the War, and during the War a great stimulus was given to their extension, since European goods became practically unobtainable. It is evident that these countries are by no means content to remain agricultural or pastoral, but are making efforts to develop industrially.

Moreover, some tendency is noticeable for British capital to join in the development of local industries, by setting up or acquiring branch factories oversea to work in conjunction with principal factories in this country. This holds, for example, of Canada, though British capital is not so extensively interested in Canadian industries as is United States capital. Before the War a considerable amount of British capital was invested in American industries, notably in the United States Steel Corporation.

In many of these newer countries the position is not yet serious from the point of view of British industry, because they are still in an early stage of development, in which they cannot afford to divert large quantities of capital from the more fundamental task of opening up new territory by establishing means of communication and exploiting natural resources. Thus Brazil is only at the beginning of its development, and is likely to require British and other manufactured goods and capital for many years to come. It must be remembered also that there are large areas suitable for agricultural development in which there seems to be no likelihood of manufacturing industries being set up. This applies, for example, to wide stretches of the African Continent.

There can be no doubt that Great Britain is in a much less favourable position, as a result of the growth of manufacturing industries in oversea countries, than she would have been if these countries had been content to remain producers of materials for British industries. The development of our industries would have been much greater, and we should have been able to exchange our manufactured goods on much more advantageous terms against imported produce than is in fact the case.

While it is undoubtedly true that the main advantages

resulting from the development of oversea countries by British capital have accrued to the countries in which the capital was invested, it does not follow that the advantages to Great Britain have been or are insignificant, even where the growth of the countries concerned has led to the establishment of competing industries.

The matter cannot be judged entirely from a narrow economic point of view. On the whole, we may hope and believe that the growth of new centres of civilisation will react favourably in the long run upon our own civilisation, and will indirectly lead to improvements in economic organisation. The advantages which this country has derived and will derive from the development of America cannot be measured in terms only of the food and raw materials which we obtain from her, but must be reckoned also from the point of view of the influence of American thought, organisation, and invention upon life in this country. During the recent War, moreover, this country had reason to be thankful that the United States was to some extent developed industrially, as its industries enabled America more effectually to assist the Allied cause.

The point should also be emphasised that as countries become settled, and reach a stage at which they are beginning to be able to compete in the open market with British manufacturers, British capital has in fact tended to flow elsewhere. While the main stream of British capital was directed during almost the whole of the nineteenth century to the United States, this was no longer the case during the twentieth century. British capital was possibly still on balance flowing into the United States, but the flow to that country was small compared with the aggregate outflow of British capital, and some other countries—notably Canada and Argentina—attracted larger streams of capital. The attractiveness of new fields was greater than that of the old fields because the United States was more self-sufficient in regard to capital, while the profit to be expected in Canada and Argentina from opening up the country for the production of much-needed crops was relatively great.

The effects of the growth of competing industries abroad in restricting the profitable employment of labour in the United Kingdom may be counteracted by the fuller development of the productive capacity, skill, and initiative of our own people. This would enable us to specialise on the production of articles of a kind or quality which other countries are unable to make. In this connection it is necessary to touch upon the relation of overseas investment to the development of the resources of our own country.

The most serious indictment of the export of capital generally comes from those who point to the pressing need for expenditure of a capital nature in this country, and urge that it would be socially advantageous to divert part of the flow of capital from overseas investment to investment in this country. It is no conclusive answer to this criticism to say that capital is invested overseas because a higher return is expected or obtained than if it were invested at home, for those who control the flow of capital look primarily to their private advantage, while those who raise the objection referred to look at the matter from the point of view of the total advantage, private and public.

Critics on this ground maintain that Great Britain would have been happier and in the long run more wealthy if part of the capital which flowed overseas had been diverted to such objects as the improvement of housing and the raising of the standard of education in this country. Much might be said in favour of their view.

The immediate effect of such diversion of capital to home investment would be to call for a strengthening of certain industries and occupations—*e.g.* the building industry and teaching profession—which look to a home market, at the expense of other industries and occupations which look to an overseas market. At the present juncture, when the exporting industries are abnormally depressed, the export of capital seems, as has been suggested above, to call rather for encouragement than discouragement; but later, when prosperity has been restored, and the acute distress among workpeople specialised to industries manufacturing for export has been mitigated, it will require

consideration whether a larger amount of the material resources than heretofore should not be devoted to building up the efficiency of the nation.

The adoption of such a policy would not of course necessitate the imposition of any artificial restriction upon the export of capital: money for the purposes in view could be raised by taxation or by loan. Either method would tend to reduce the amount of capital available for other purposes, including that available for export.

A strong theoretical case, however, can be made out for some public supervision over the uses to which capital is to be put. There is no doubt that a certain amount of the capital which flows into oversea investment—as also into investment at home—is used for objects which do not promote the interests of the world, and the interests of this country in particular. Most of the money subscribed to foreign Government loans for the financing of armaments or wars would come within this class. There are also many gambling and semi-fraudulent enterprises in which an all-wise Government would prohibit the investment of British capital.

It is, however, questionable whether in fact attempts to control the export of capital would not do more harm than good. This problem is considered in the next section of this memorandum, in connection with the question of the methods by which control can be exercised.

III. Practicability of Control over the Export of Capital and Investment Oversea

Attempts to exercise public control over the investment of capital outside a country's boundaries may take any of the following forms:

- (a) Control over the foreign exchanges with a view to checking undesirable export of capital.
- (b) Control over admission of securities to quotation on the Stock Exchange.
- (c) Control over the import, export, or transfer of securities.

- (d) Imposition of taxation discriminating against capital invested abroad or special classes of investment.
- (e) Granting of special advantages to particular classes of investment oversea or at home.

During the Great War all these methods of control with the exception of (e) were adopted by Great Britain.

Control over the foreign exchanges was exercised by virtue of Regulation 41D of the Defence of the Realm Regulations. This provided that—

A person resident in the United Kingdom shall not, without permission in writing from the Treasury, directly or indirectly, either on his own behalf or on behalf of any other person resident in the United Kingdom—

(i.) Send any remittance out of the United Kingdom for the purpose of—

- (a) Making, or subscribing to, any loan or subscribing to any issue of capital outside the United Kingdom ; or
- (b) Purchasing any stock, shares, or other securities, or any property other than merchandise, if the securities or property are not in the United Kingdom ; or
- (c) Purchasing any foreign currency to be held with a view to appreciation in value or as an investment ; or

(ii.) Take part in, or agree or offer to take part in, any of the above-mentioned transactions, if such transaction involves the sending of any remittance out of the United Kingdom.

Any banker or person acting in any similar capacity shall, as a condition of sending out of the United Kingdom any remittance on behalf of any person resident in the United Kingdom, require the person resident in the United Kingdom to make a declaration in writing as to the purpose for which the remittance is proposed to be sent.

Control over admission of securities to quotation on the Stock Exchange was one of the restrictions imposed by the Treasury upon the Stock Exchange, as a condition of re-opening, early in 1915. It was provided that “ No dealings will be allowed in any new issue made after 4th January 1915 unless specially allowed by the Committee (of the Stock Exchange) and approved by the Treasury.” Thus the issue of new stock was not a punishable offence, and in fact issues were occasionally made privately, but the opposition of the Treasury was an effective bar to the success of any proposal for a public issue. For the Treasury

laid it down that they would not be prepared to sanction any dealings in new issues of which they had not previously approved.

Several regulations restricted the import, export, or transfer of securities. In the first place, Regulation 9 of the Temporary Regulations laid down by the Treasury as a condition of the re-opening of the Stock Exchange provided that "No securities will be a good delivery unless supported by a declaration of a banker, broker, or other responsible party that they have remained in physical possession in the United Kingdom since 30th September 1914, and have not since the outbreak of war been in enemy ownership." Secondly, Regulation 70 of the Defence of the Realm Regulations prohibited the export on private account of certain classes of securities of which the Treasury had decided to take possession in connection with their schemes for obtaining credits abroad. Thirdly, Regulation 30BB of the Defence of the Realm Regulations prohibited the transfer to an alien or to a foreign controlled company of shares or other securities of certain classes of undertakings, namely, copper, lead, tin or zinc mines, oil fields, and munition works in Norway, Sweden, Denmark, Russia, Holland, Spain, or Switzerland.

Another method of dealing with oversea investments adopted during the War was the imposition of a special additional income tax of 2s. in the £ upon the income from certain securities which the Treasury wished to have deposited with it, for the purpose of using them as collateral for loans in America.

Altogether the Government exercised during the War very extensive powers of control over the export of capital, while it restricted in certain cases the sale to foreigners of British-owned securities (*i.e.* import of capital), and reduced by special taxation the yield upon particular securities of which it wished to obtain possession.

How many of these methods of control would it be practicable to apply in time of peace ?

It will hardly be contested that the exercise of control over the exchanges with a view to preventing, limiting, or

directing the flow of capital would be in this country wholly impracticable in normal circumstances. The community would not tolerate it, and if they did it would react disastrously upon the position of London as the principal banking centre and money market of the world.

Even if the system of exchange control were acceptable for the purpose of limiting or directing the export of capital, it is questionable whether it could be made at all effective in the absence of a censorship of the mails and cablegrams. Where a strong motive exists for exporting capital, the experience of Germany¹ and other countries in the last few years shows that it is quite impossible to prevent evasion. One of the effects would certainly be that a part of our earnings abroad, whether from shipping or from enterprises in foreign countries, would not be remitted here at all, but would be left to lie abroad.

A much stronger case could be made out for the exercise of Government control over the admission of securities to quotation on the Stock Exchange. This was done in France and Germany before the War. Nevertheless, there are serious objections to the imposition of any such system upon British Stock Exchanges. In the first place, its establishment would introduce an element of politics hitherto lacking into the London capital market. The question whether a loan could be issued would depend not merely upon business considerations, but also upon political considerations, and this would open the door to wire-pulling. International relations might also be affected by refusal to admit to quotation stocks of particular countries. An even more important effect would be that business would be driven away from the Stock Exchange either to outside brokers or to other Stock Exchanges. A considerable amount of foreign business is brought to London in consequence of the wide range of securities dealt in ; and if the scope of the Official List were reduced this business might go to, say, New York, and it might

¹ An interesting analysis of the methods adopted to evade the control of the exchanges is contained in *L'Évasion des capitaux allemands*, by L. Wulfsohn and G. Wernlé, Paris, 1923.

be followed by a substantial amount of British dealings through New York. New issues would be made in foreign countries, and thus a lucrative business would be lost. Some good might no doubt result if it were made more difficult for British capital to find an outlet in gambling ventures, but it is questionable how far the Government could take into account the financial soundness of undertakings when considering whether to allow their securities to be quoted. In so far as Government control was used to favour investment in certain areas (*e.g.* the British Empire), or in certain industries (*e.g.* transport as against manufacturing in foreign countries), it has to be remembered that any such action could exercise only a comparatively small influence in the long run. British capital is not the only capital available, and if a foreign country or enterprise cannot borrow in London it may be able to borrow elsewhere. It may even be that British capital would make it easier for foreign capital to flow into the industries or areas in question, by filling those openings which the foreign capital would otherwise have been required to fill. Thus, if an attempt were made to prevent British capital flowing into, say, Brazil, American capital which would otherwise have been invested, say, in Canada might go to Brazil, and British capital might go to Canada. The fluidity of capital is such that this kind of adjustment is always likely to occur.

The effective exercise of Government control over the import, export, or transfer of securities in the interests of some public policy would be even more difficult than the method of control which has just been considered. In the first place, control over import or export of securities would involve examinations of the mails. In the second place, it would certainly encourage British investors to keep their securities abroad, and to buy and sell on foreign Stock Exchanges. Before the War it was not unknown for British-owned American securities to be left in America, and many such securities, being quoted internationally, could at will be disposed of abroad. Control over the transfer of securities could be effective at best in the case

of registered securities where the register is kept in this country alone. Bearer securities, and securities of foreign companies which permit transfer on to a register held outside the United Kingdom, would be hard to deal with. Even in the case of securities transferable on a British register alone, it might not be altogether easy to ensure that holdings were not transferred to foreign interests by being registered in the name of men of straw. It should be borne in mind also that attempts to control the transfer of securities would tend to encourage evasion by the registration of companies abroad and the issue of bearer securities.

The imposition of taxation discriminating against certain classes of investment (*e.g.* capital invested in foreign countries as against capital invested in Great Britain or the British Empire) might also be confronted by great difficulties, though it would on the whole be more feasible than the method just discussed. The difficulties would be largely difficulties of definition and administration. As regards definition, assuming that the tax were levied on income, how is the line to be drawn between income from capital invested abroad and income from capital invested in the Dominions or in Great Britain? In many cases, *e.g.* Government and Municipal loans, and foreign railways, the classification would be easy enough, but how would a British company operating partly in this country and partly abroad be treated? It might not be possible to distinguish income obtained from abroad from income obtained from operations at home, and if a distinction were made it would be difficult to ensure against fraud. For example, a British manufacturer possessing his own sources of raw material abroad, by entering the material at a low price, could swell his British earned profits at the expense of his foreign earned profits. Division of the profits in proportion to the capital invested in this country and abroad would be difficult, because it would raise the problem of determining the value of the capital. And even if this difficulty could be overcome there would apparently be nothing to prevent the business being split up

into two companies, one carrying on the British end of the business, and the other—a subsidiary company—the foreign end. The profits could then be juggled as before between the foreign company and the British company, and the Revenue Authorities would apparently be quite helpless.

If a differential tax on income from foreign securities were decided upon, it might be necessary to confine it to foreign government and municipal loans, together possibly with some other investments which offered no possibility of evasion. A tax levied on income from foreign securities of these kinds would probably be better than a tax on the capital, since income tax is now levied on all income from foreign securities owned by persons resident here, whether received and retained abroad or brought to this country. On the other hand, securities purchased abroad do not pay the British Stamp Duty.

Finally, the Government may endeavour to influence the flow of capital by granting special facilities or attaching special advantages to particular classes of investment. Clearly this may be done in many ways. The Government may guarantee payment of interest on particular loans wholly or in part. It may relax restrictions upon the investment of trust funds, as it did in favour of Colonial Government loans some twenty odd years ago. Or a similar end may be reached by arrangements with other Governments which levy an income tax, to remove double taxation.

On the whole, the exercise of public control over investment outside the country would be fraught with difficulties. With the exception of the method of offering special advantages to particular kinds of investment, which is apt to be expensive, each method considered has serious disadvantages or limitations of practical applicability. Control over foreign exchanges with a view to checking undesirable export of capital would be intolerable in normal times in this country ; control over admission of securities to quotation on the Stock Exchange would tend to drive business away to other countries, and would have reactions

in the sphere of international politics; control over the import, export, or transfer of securities would be only partially effective; and discriminatory taxation against foreign investment would be difficult to apply in practice outside a more or less limited sphere.

THE FUTURE OF BRITISH INDUSTRY

WITH SPECIAL REFERENCE
TO THE PROBLEMS OF WAGES AND TAXATION

Prof. J. H. JONES

I

THE nineteenth century witnessed the introduction of a fundamental change in the structure of economic society, not only in this country but over the greater part of the world. At the beginning of the century England was almost a self-contained economic unit. Her trade with other countries, though by no means insignificant, was not essential to the life of her people. A successful blockade would have caused dislocation and discomfort, but not inevitable physical suffering. The nation, again, was split up into a number of regions, each of which was independent of the remainder for what was essential to life. By the end of the century industrial specialisation had proceeded so far that the world had almost become a single economic unit, each part of which was largely dependent upon the remainder for many of the necessities and most of the comforts of life. Great Britain was able to feed but a small fraction of its population, and many of its important industries drew their materials from the ends of the earth.

This fundamental change was due to two interrelated factors—the employment of engineering methods in industry and the development of transport. These are also likely to prove so important in the future that they will call for further attention. By 1870 we had already

built about two-thirds of the railways now existing in this country ; our roads which, half a century before, were but muddy tracks across open and almost unexplored country, had been vastly improved to meet the growing needs of light transport.

The steamship, clad in iron, had supplanted the sailing ship of wood, the factory system had become firmly established, and the country, aided by the gradual adoption of free trade, had become the "workshop of the world." Other countries lagged behind. In the first half of the century our overseas trade was still, in the main, with coastal towns which had but a narrow hinterland. Inland regions, particularly in new countries, still remained to be exploited, and could only be brought into the main channels of world trade after they had been linked up with the coast by means of railways.

It was natural, therefore, that they should look to us for assistance, both industrial and financial, and that, having abundant supplies of coal and iron ore, we should have developed a large export trade in steel and engineering products and all the materials for transport, as well as in woollen and cotton goods (for cold and hot climates respectively), and have devoted considerable attention to shipbuilding. In due course Germany, the United States, and later South America, India, Canada, South Africa, and other places were opened up to world commerce, largely through our instrumentality. It came to be realised that each nation, in turn, flourished upon the wealth, not the poverty, of the rest of the world. The statement obviously remains true for two "complementary" regions, such as Great Britain and the Argentine Republic. Argentina buys what we have to sell, and sells what we require. The advance of that country is therefore bound, sooner or later, directly or indirectly, to benefit us.

But many people now cast doubt upon the accuracy of the statement when applied to Germany, the United States, and this country. The first two enjoy the same mineral resources as we do, and have followed the same line of industrial development. They compete with us

in the markets of the world. On some fronts we have retreated before their advance—notably in the earlier stages of iron and steel manufacture. The relationship is said to be one of economic rivalry: the three countries are competitive rather than complementary. And it was argued, even before the War, that if, for example, Germany disappeared, the result would be beneficial to the trade of this country. I believe the argument to be false. It is true that some of the competing industries in this country would enjoy an immediate and direct benefit. But I believe that such benefit would only be temporary, and that, in the long run, the nation as a whole would lose more than it gained. The argument in support of my belief is too long and theoretical, and too near the limit of relevance, for insertion in this memorandum. But it is noteworthy that the period of greatest industrial advance in this country synchronised with the period of most rapid development in those other states which, throughout that period (1887–1914), were regarded as dangerous rivals.

It is of the first importance that we should emphasise the community of economic interests in the world as a whole. Trade does not resemble a fixed area to be held against an advancing enemy. It is like an appetite, which grows with what it feeds on; it represents a continuous adaptation to a slowly changing and expanding environment. Each nation specialises, in greater or less degree, upon an appropriate group of industries. In so far as the choice is conscious and deliberate, or is strongly influenced by competition, it is based upon the principle of relative costs. These do not remain constant; they vary from year to year and from generation to generation. While some industries may decay slowly others take their place, and the volume of trade grows with the growth of population, the development of science, and the improvement of organisation.

II

When the reverberations of the War die down the industry of the world will return to its former line of

development. New areas will be exploited, and those industries which are intimately connected with capital development will recover their former importance. Engineering and transport, in the widest sense, will resume their leadership. This country will enjoy an adequate share of the new prosperity.

For the time being what is essential and permanent in the economic situation is obscured by the disturbing influences of the War and the terms of peace. There are urgent problems to be solved. Fresh political boundaries have been drawn across Europe, cutting through former States and destroying older economic units. The new States have not yet established appropriate economic relationships with their neighbours. Peace, an essential preliminary to confidence and settled trade, has still to be secured. European States have either shirked or failed to solve the problem of balancing their budgets, and have continued to inflate their currencies, in spite of repeated warnings from all sides. Most of them, either through poverty and impotence, or through lack of courage, have accumulated "floating" debts abroad which they show no sign of paying, with the result that the external values of their currencies have fallen even below the domestic values. Although such external depreciation of the currency has provided a sort of bounty upon exports, the countries concerned have been too thoroughly disorganised to avail themselves largely of their momentary advantage. These are urgent problems, but the experience of Austria during the past year suggests that, provided they are approached in the right spirit and with a single object, they are capable of easy and rapid solution.

2. When the more urgent problems have been solved there will remain other difficulties to be overcome. In the first place, a profound change has taken place in the financial relationships of States. For generations before the War we had steadily exported capital, on which we received large sums as interest. A considerable proportion of our foreign securities was sold during the War; we also borrowed large sums in the United States, and lent large

sums to our Allies. Until the question of inter-Allied debts is settled our final position will remain obscure. The United States, once a debtor, is now a strong creditor State. Germany, once a large exporter of capital, is now a heavy debtor. The repayment of old debts, the creation of new debts, and the imposition of heavy indemnity obligations have considerably altered the balance-sheets of most of the industrial States of the world. The process of bringing the new obligations into the ordinary channels of trade may prove a highly disturbing factor, but provided we restore to the world the pre-War facilities for investing capital in the best market, and for converting floating debt into long-term obligations, the disturbance should not be beyond control.

We shall also be faced with the problem of adjusting many important industries to the new needs of the world. The industrial organisation of this country was built up on the assumption that the world demand for products would not be violently changed. One important item of that demand consisted of armaments. The industries directly affected by the demand for armaments were iron and steel manufacture, engineering, and shipbuilding. During the War those industries were considerably enlarged, and their producing capacity in this and other countries now appears to be considerably in excess of the requirements of peace. The immediate difficulty of the situation is intensified by two further considerations, first the disarmament agreement, and, secondly, the enforcement of reparation payments. If Germany is allowed to develop her resources in the most effective way, in order to pay reparations, the industries which will be further strengthened are those which already appear to have grown beyond the immediate needs of the world.

These are temporary difficulties which, though they may prove serious for a time, will finally disappear if and when a permanent political solution is found in Europe. In the first place, new areas will be opened up, capital development will be restored, and those industries which were so essential in war will be essential for the require-

ments of peace. The arrears of the last ten years will be overtaken, and further development will take place to meet the expanding needs of a growing population. The experience of the second half of the nineteenth century will be repeated, on a larger scale. Russia and other parts of Europe, China and India, and even America are ready for considerable railway development. All the industries connected with engineering and transport will be fully employed. In the second place, the new developments will facilitate the problem of adjusting the financial relations of States. Germany, for example, could pay part of her indemnity by sending railway material to Russia, and transferring the property rights in the new railways to the recipient of the indemnity. We could pay America by transferring bonds representing new investments in other countries. These are simple illustrations of the fundamental truth that the settlement of international financial obligations cannot be separated from the restoration of world trade and the development of new economic regions.

It is frequently assumed that if and when Germany pays an indemnity to France she will oust our manufacturers from the French market. The assumption seems to me to arise from a misconception of the nature of international trade and finance. Germany can only fulfil her indemnity obligations by creating and maintaining a surplus of exports over imports; but the surplus will not necessarily be sent to the recipient. It will go to the places where the need is greatest, and so provide a supply of bills which Germany will be able to employ, directly or indirectly, in meeting her *financial* obligations to the government to which the indemnity is due.

3. It is not suggested that the economic recovery of the nation as a whole will be accompanied by the full restoration of every industry now existing. Industrial adjustment will be necessary in the future as it has been in the past. When, during the nineteenth century, we recovered again and again from slumps in trade, the industrial picture was never exactly reproduced. The relative importance of different industries underwent a

change—some gradually decayed as other countries entered the field of competition, others became relatively more important, and new ones sprang into existence. The ultimate effect of the War will be to hasten changes which would inevitably have occurred, over a longer period, even if the peace of the world had not been disturbed. The final character of the adjustments in industry will be mainly determined, as in the past, by geographical considerations, though they may be influenced, in greater or less degree, by disarmament (which will permanently affect the development of the steel, engineering, and ship-building industries), by the reparations policy of the Allies, and by the financial policies of the chief States of the world.

III

There are people who would be prepared to endorse the view set forth in the second chapter in so far as it applied to the world as a whole. But they fear that this country will not share in the general recovery of trade. Countries, like towns, may decay, and Great Britain may now be entering upon a period of decay. British industry, it is argued, is seriously handicapped by high wages and heavy taxation. The remainder of this memorandum is devoted to an examination of this argument.

1. It is a well-known economic fact that wages change less rapidly than prices. On a rising market wages lag behind prices, and the actual costs of producing an article are lower than the price obtainable, and lower than the cost of reproduction at the time when the article is sold. When, as the result of currency inflation, the rise in prices is rapid and continuous, the wages of the average worker are, relatively, very low, and the manufacturer enjoys a sort of bounty. Again, when the price level is falling rapidly, wages at any point of time are relatively high, though falling in absolute amounts. It is partly for this reason that in Germany, Belgium, and other countries, where currencies are being inflated, exporting manufacturers are able to quote prices which are beyond the reach of

competing manufacturers in this country, where the price level is falling. But this is a phenomenon which is witnessed during the process of change, and when currency, prices and wages are stabilised the bounty disappears. It is assumed, in the paragraphs which follow, that such stabilisation has been achieved.

2. Between 1914 and 1920 money wages advanced by leaps and bounds, but afterwards they fell rapidly. The advance was due to the rise in the cost of living—and it intensified that rise ; the retreat was started by the depression in trade—it intensified both the depression and the fall in the cost of living. The net changes varied between different industries and different occupations. Each reduction seemed to bring immediate relief to the industry concerned, from which it was concluded that wages had previously been at an “uneconomic level.” It was therefore plausible to argue that high money wages were a factor retarding the recovery of trade. The argument is not wholly true.

If we assume that wages are stabilised for a long period in all industries at a given (uniform) percentage above the pre-War wages, it may be stated with confidence that industry, as a whole, will not be more heavily burdened than it would be if wages were reduced to the pre-War level. The recent history of Germany, Belgium, and other continental countries provides ample evidence in support of that conclusion, which may be also proved as follows. Wages and salaries are the most important—indeed the only important—factor determining the volume of currency in circulation. The volume of currency determines the value of that currency both internally and (under normal conditions) externally. If wages and salaries were multiplied by ten, and the general level of prices were correspondingly raised, the parity value of the currency in terms of other currencies would be proportionately reduced ; in other words, whether the wages of the average worker were called one pound or ten pounds per week, the price of the product would be precisely the same when specified in a foreign currency.

If the statement were not true, Germany would have lost her export trade ; Austria and Poland would be able to export to Germany only ; Belgium would not be able to export to us, nor we to Sweden. If the statement is true when the currency (or wage rate) is multiplied by a hundred or by ten, it is no less true when it is multiplied by two or by one and a half. There is no characteristic about one multiplier which is not possessed by any other multiplier, provided it is sufficiently large to produce any measurable effect. The history of our exchange with the United States during the last four years provides conclusive evidence that even a rise or fall of 10 per cent in wages and prices is sufficient to produce a marked effect upon the external value of our currency.

It may therefore be stated with confidence that, given an elastic currency, it makes no appreciable difference, in the long run, to international trade whether money wages be stabilised at a very high or very low level. The contrary belief is a relic of pre-War days when our currency, being based in fact as well as in theory on gold, was not highly elastic. A general rise in pre-War wages beyond the limit which our gold currency could carry would have resulted in a collapse of industry and widespread unemployment. It follows that the level at which wages in paper money will ultimately be stabilised should—and in the end must—be determined, not by its supposed connection with the competitive power of our industries in the international market, but by other factors, in particular by the question whether we, and other European nations, intend to return to the gold standard.

So far from providing a stimulus to industry in general by bringing wages down to an "economic level," the general reductions in wages since 1921 have even intensified the existing depression of trade. When prices start on a downward course which is likely to continue for some time, the production of durable goods, such as machinery, engines, rails, houses, is reduced. Provided, for example, the need is not so urgent as to outweigh financial considerations, no one will build a house this year if, in the near

future, he is likely to be compelled to write off part of the cost as dead loss. Stability in prices, which presupposes stability in wages, is one of the first conditions of healthy trade and steady development of capital.

3. In the foregoing paragraphs it was assumed that wages rates in all cases had been raised by an equal percentage above pre-War rates. If, however, relative wages are changed the results will vary according to the nature of the change. The actual net advances granted since the War vary between different industries; and it is probable that when wages are stabilised throughout the country the relative positions of the workers will be permanently affected. A few cases may be noted.

When the recent and continuing depression of trade set in, the wages of workers employed in those trades (such as engineering) subject to keen foreign competition were reduced. This reduction in *relative* wages gave the manufacturers a competitive advantage. Their own costs were reduced by more than the increase in the value of the currency, the latter being determined by the general price level. The immediate competitive advantage acted as a stimulus to their own trades, and provided superficial evidence of the value of wage reductions. But when these became general the value of the currency was raised, the advantage to the manufacturers disappeared, and they requested a second, and then a third reduction. An industry working under these conditions only enjoys a competitive advantage so long as the wages which it pays are *relatively* low. The importance of this consideration lies in the fact that in two important industries—coal-mining and iron and steel manufacture—the methods of payment are such that a portion of the wages of each worker is of the nature of a residue, such residue being what the market for the product can afford. The guaranteed wage is relatively low, and the industries concerned enjoyed a temporary competitive advantage in the markets of the world.

An example of a different character is provided by those industries in which wages are controlled by Trade Boards

established by Act of Parliament. Some of these industries—particularly the “Birmingham trades”—are subject to keen foreign competition. If the Trade Board rates are finally fixed at a level representing a greater percentage advance over 1914 rates than is paid in other trades (and if such is not the case the Boards do not justify their existence), the industries concerned will be in a relatively weaker competitive position. This statement does not imply condemnation of the Trade Board system. Nothing can be worse than a vested interest in human misery. But the fact remains that the trades concerned have been built up on a foundation of relatively low wages, and may not survive, in their present form and size, if relative wages are changed. It seems to be generally true that the relative wages of unskilled workers have been raised since 1914. If such is the case the industries in which the proportion of unskilled workers is greatest may experience considerable difficulty, and those employing a large proportion of skilled workers will enjoy a competitive advantage.

Perhaps the most important single case is that of transport. It appears that railway workers have received greater net advances since 1914 than the vast majority of industrial workers. It is not suggested that these are unduly large. But if, as the result of such advances, there is a corresponding relative rise in transport charges, the industrial consequences may be profound and far-reaching. They cannot be adequately dealt with in a short paragraph. But there will be a widespread attempt to economise in transport. Some industries will spread out towards the markets. In others the tendency to concentration will be strengthened: for example, in the iron and steel industries the tendency to combine the different stages of manufacture for the purpose of conserving heat will become more pronounced, and some of the older establishments will be scrapped.

4. It has been submitted that while, under a paper currency, high money wages in general do not weaken the competitive position of our industries, changes in relative wages (facilitated by, even an inevitable consequence of,

the advances granted since 1914) may bring about profound changes in the distribution of industry. Some will gain, others suffer. Similar results may follow from the reduction in hours which has been effected in the last few years. A reduction in hours which is not accompanied by a corresponding increase in efficiency means a net increase in the real costs of production. In so far as it is restricted to this country the effect will be observable, not in employment, but in the standard of living of the nation. We shall need to give, in the foreign competitive markets (in return for our imports), the same quantity of exports as our competitors; this quantity will call for more labour (in the widest sense) than before, and our standard of living will fall. There may be a period of dislocation during which we shall be groping for the appropriate export trades, and for this reason there may be considerable unemployment in some (and prosperity in others) of the existing export industries. But these are intermediate effects; in the long run the effect of the reduction in hours will be revealed not in unemployment but in the standard of living. In so far as the net reduction in hours (and efficiency) is universal, comparative costs will remain unchanged. The dislocation will be less than in the first case, but fewer goods (relatively to population) will be exchanged, and as these will necessitate the employment of the same number of people as before, the fall in the standard of living will be universal. In practice it will probably be found that the reduction in hours will produce different effects in different industries.

The conclusion to which the above considerations lead is that efficiency is a more important factor in the future industrial prospects of the nation than the actual rate of money wages paid to the representative worker. Moreover, the same and other considerations, which are not relevant to the subject of this memorandum, would lead to the conclusion that the first factor is also vastly more important than the second in determining the standard of living, or real wages, of such worker.

IV

It is frequently argued that the future of this country is seriously prejudiced by the burden of taxation, both central and local, which our industries are compelled to carry. The main competing industries abroad, we are informed, will not be similarly handicapped. In Germany the inflation of currency has obliterated all debts of fixed amounts. The Imperial and State governments and the municipal authorities enjoy all the advantages of cancellation without having incurred the odium of formal repudiation. The people will not be crushed under an intolerable burden of rates and taxes. Business enterprises, moreover, are in the position of having received gifts equivalent to the mortgages, debentures, and all the fixed interest stocks with which, before and during the War, they were encumbered. A large proportion of the standing charges has been wiped out. The German manufacturer is therefore in receipt of a veiled bounty of considerable amount. The United States entered the War at a time when the nation had already made large profits from the necessities of the Allies, and when those are deducted from the costs incurred after it had entered the conflict, it will be found that the burden of taxation upon American industry will not prove a serious handicap. Such is the argument.

1. It is impossible for any nation, by financial jugglery, to escape the economic consequences of a war in which it has participated. But the distribution of the burden is, to some extent, within the control of the government. In Germany the recipients of fixed investment incomes have been compelled, by the acrobatic feats of the mark, to carry the burden up to the limit of the capital represented by such incomes. By combining moderate inflation of currency with direct and indirect taxation we have hitherto distributed the costs of the War over all the members of the community. But when business men complain of the effects of taxation upon industrial enterprise they refer more particularly to the income tax.

An income tax is not, however, a burden upon industry of such a kind as directly to injure the latter in competition with foreign rivals. Those who assert the contrary assume that it represents a charge upon a business which, under ordinary trade conditions, is transferred to the consumer in the form of a higher price for the product. Such is not the case. An income tax is finally paid upon past realised income, by the recipient of that income. Deduction at the source is merely an administrative convenience which does not normally influence the final incidence of the tax. A business, *qua* business (be it a one-man business or a public company or of any intermediate type), never bears the burden, nor can the latter be shifted to the consumer. If, in practice, such shifting appears to take place, it is for the reason that the firm was not already charging what the market could bear. The imposition of an additional income tax may create or strengthen the incentive to raise the price of the product, but it creates no new power on the part of the market to bear a higher price.

Moreover, payment of an income tax does not destroy capital. It merely represents change of ownership of a sum of money. What may, and does, affect the supply of capital available to private industry as a whole is the manner in which the proceeds of taxation are employed. If they are employed to pay interest on or extinguish part of the national debt, the supply of capital available to industry will depend upon the use made of the money by the recipients. What, in fact, did destroy capital was the War, that is, the manner of employment of the loans upon which interest has now to be paid from the proceeds of taxation.

But there remains a further consideration. It was held, two years ago, that an income tax of 6s. in the pound was a "drag" upon industry in that it had a depressing effect upon the business community. This psychological factor may conceivably be of great importance. An excessive income tax, if it produces such a result, may weaken the power of resistance and the spirit of enterprise, and so react unfavourably upon those industries subject to foreign competition. If people honestly feel that an income tax

is too heavy in the circumstances of the time, then it is, in fact, too heavy—just as bank reserves are in fact too low when people feel that they are too low. Appearance is reality. In such an event the business community will seriously consider the two possible alternatives. The first is to transfer more of the burden upon bondholders by inflating the currency to such an extent as to make possible an appropriate reduction in the income tax rate. The second alternative is a drastic reduction in the national debt by means of a direct levy on capital. That neither of these is seriously advocated by the business community is evidence in support of the conclusion that the psychological factor is not important. In no other sense can it be argued that a heavy income tax is likely to prove a handicap to British industry in competition with foreign rivals. The tax upon corporations falls into a different category. The effects of such a tax cannot be measured without full knowledge of the industries concerned, in particular, knowledge of the ratio of private to public companies and of the difference in size and profitableness under each form of control. No greater objection to a tax can be urged than that it is of the nature of a gamble with high stakes. It may be suggested that in general the tax tends to operate as a check upon the transference from private to public company control, and thereby to retard enterprise. Its effect resembles, in some respects, that produced by the existing system of rating, which is examined in the third section.

2. Interest on debenture stock, royalties, land rent and payments of a similar character represent fixed charges, and are therefore an element in cost differing in character from residual payments on share capital. It is difficult to estimate the effect, upon the position of German exporting industries, likely to be produced in the long run by the virtual cancellation of such charges. When a joint-stock company has paid off its debentures, not only is the amount available for division among the ordinary shareholders increased, but its ability to attract new capital, when required, is also strengthened. It is therefore agreed that

its competitive power has been enhanced. During periods of depression, however, firms work on a basis of prime costs, and are content to make what the market will allow towards standing charges. Prime costs in Germany and elsewhere will not be directly affected by the obliteration of a great part of the on-costs of manufacturing industry, and, if the question of reserves is ignored, it is probable that the competitive power of German firms will not be substantially greater than it would otherwise have been. During a trade boom, the demand is so great that competition is suspended; nearly all firms are able to command prices which cover the total costs. But between the slump and the boom there is a long interval during which competition is effective and the test of efficiency strongly operative.

New firms and industries established in Germany after currency has been stabilised will be financed in the usual way. They will carry the customary quota of new debentures, and pay rent and royalty on the new currency basis. It is only by such new additions that German industries would be able to destroy competing industries in this country; and in the long run it is the total costs in such new factories that will be the measure of the strength of German competition. Nevertheless one disquieting fact emerges from this consideration. The newest German firms, bearing appropriate standard charges, will be the best equipped in the technical sense; the existing firms, which may soon be technically less efficient, will continue to be in receipt of a veiled subsidy due to the virtual cancellation of fixed charges incurred in the past. Our industries will bear a burden from which large German industries already existing are free, but which new German firms will share. It is therefore not unlikely that existing British firms will have less power of resistance against industrial change. Their retreat may be more rapid than in the past; the danger of failures may be increased. New enterprises, however, will not be similarly handicapped. They will be equipped as efficiently, and will carry the same fixed burdens, as the new German enterprises, which will likewise be faced by the "bounty" granted to their

older rivals in their own country. The importance which attaches to the general argument thus depends upon the period under consideration. It will diminish as time passes, and probably sink to zero in a decade.

3. The rating problem is far more difficult than that of taxation. Rates which are levied upon real property represent a mixture of direct and indirect taxation. The accepted theory is that their incidence is divided between the landowner and the tenant of the property. Where the building is a factory or other business structure, the tenant's share is normally transferred to the consumer of the product. Such rates are therefore of the nature of indirect taxes upon commodities. They represent, in effect, labour cost ; and private industry carries a heavier burden when it carries a heavier real labour cost. Like excise duties, rates constitute an addition to the cost of manufacture and distribution. But, unlike an excise duty, they are not a constant element. Rates vary from town to town ; assessments frequently vary in an arbitrary manner between different establishments in the same rateable area, and are but slowly adapted to new conditions. Even before the War there were serious anomalies due to the rating system, and the competitive position of many manufacturers was injured. This was, in part, a domestic problem. But our exporting industries were also handicapped in competition with industries established in places where the rates were lower, or where, as in Germany, local revenue was obtained partly by means of a local income tax. The rates which our industries paid had precisely the same effect as an export duty on the commodities.

It is by no means certain, however, that the War will ultimately impose a heavier handicap than that previously suffered. The destruction of the German mark has, of course, resulted in the virtual cancellation of all municipal debt. But the great bulk of that debt was probably incurred in respect of reproductive services, which provided for all debt charges and an adequate sinking fund. Whether the services will be supplied at prices sufficient to cover appropriate charges based upon cost of reconstruction, and

the resulting net profit will be employed to relieve private establishments of some of their burden, is a question which only the future can answer. Again, it is difficult to say whether local rates will, in fact, be heavier in this country than they were before the War, when allowance is made for the change in the value of money. They are now relatively heavy on account of the cost incurred in the relief of distress due to unemployment. But this may be regarded as a temporary charge. Moreover, the rates appear to be heavier than they are in reality on account of the fact that assessments are still largely based upon the pre-War value of money. They will only prove to be an additional burden provided they represent an increase to the community in the net cost, measured not in money, but in labour. In that case, provided the price level continues to be considerably above the pre-War level, there will fall to be deducted, in the case of all existing business enterprises, a sum which they gain through the fact that land rent will not have advanced with the fall in the value of money ; while there should be added a sum due to the fact that none of the additions to rates since the War will fall upon the landlord. The second sum will obviously be considerably less than the first. During a period of rising prices the industrial community always gains at the expense of landlords.

4. The considerations set forth in this chapter suggest that British industry has little to fear from the fact that the burden of direct taxation is heavier in this country than in Germany and America. The tax on corporations, however, tends to retard industrial development, and should therefore be abolished. The virtual disappearance of fixed charges (such as debenture interest) upon German enterprises is likely to prove a considerable handicap, not only to competitive enterprises in this country, but even to similar enterprises which will be founded in Germany after the currency of that country has been stabilised. But the bounty to the German firms will grow steadily smaller as capital is renewed, and will ultimately disappear. The effects of the cancellation of the debts of German municipal-

ities are obscure, though they are in danger of being over-rated. The rating system of this country, however, suffers from serious defects, and acts as a drag upon business. The events of the last few years but add to the urgency of the need for a reconsideration of the methods of local finance and administration.

PART III
CONDITION OF BRITISH INDUSTRIES

AGRICULTURE AND UNEMPLOYMENT

Sir A. D. HALL

COMPLAINTS of depression in agriculture are unfortunately not new in this country. Even if we neglect the happenings at the close of the Napoleonic Wars, the bad times of the eighties and early nineties of last century are well within memory. Just before the War, British farming was quietly prosperous and gaining confidence, then came the period of sudden and unexpected profits from War prices, to be followed by an equally sudden break leading to the present painful period of readjustment. Viewed very broadly, the cause of the recurring depressions and of the declining attractiveness of farming has been that while prices of produce have been falling, that of labour, the chief item of expenditure, has been rising, without any marked increase in the effectiveness of the labour such as machinery has caused in the other industries. A century and a half ago the price of wheat was above 50s. a quarter, and a labourer in the eastern counties got 7s. 6d. a week. About 1835-40 wheat was a little dearer and wages had risen to 10s. 4d. per week. By 1860 wheat was still over 50s. and wages had advanced to 11s. In 1900 wages were 13s. and wheat 29s.; in 1910, 14s. and 33s. were the comparative figures, leading to the maxim quoted by many farmers that a week's wages ought to be the price of a sack of wheat. In 1922 wages, though declining from the War level, were still 30s., and many farmers found it difficult to sell their wheat at 40s. If further we allow for lag, the fact that much of the expenditure upon a crop is incurred at the rates prevailing six months or a year before its sale, it is easy to conceive

the confusion into which farmers were thrown by the break of prices two years ago.

These, then, are the broad facts wheat growers have had to face within the last century and a half, a quadrupled wage rate and a fall of 25 per cent in the prices obtained for their produce. Other industries have met analogous changes triumphantly, but farming cannot be speeded up like cotton spinning. One crop a year is all that is possible, and the only substantial aids that have been derived from machinery within the period are the self-binder and the threshing machine. The introduction of artificial fertilisers since 1835 has perhaps raised the fertility of our land by one-half, but the greater part of the farmer's routine is still carried out, as it was in the latter years of the eighteenth century, by human labour.

With this brief historical outline at the back of our minds, we are better able to consider what is likely to be the future of agriculture in Great Britain, and particularly what chance it has of providing greater employment and maintaining a larger population by work upon the land. It will add precision to our ideas if we begin with some figures, which represent the actual costs of wheat-growing on an English farm of second-class land in 1923.

COST OF GROWING WHEAT, FOLLOWING VETCHES, PER ACRE

	£	s.	d.
Rent and rates	1	3	2
Manual labour	2	0	3
Horse labour	0	19	5
Tractor	0	19	4
Seed	0	18	8
Fertilisers	1	10	0
Rotation and cleaning costs	1	14	1
Implements, depreciation, etc.	0	14	5
Thatching	0	2	2
Threshing and marketing	0	17	0
	<hr/>		
	£10	18	6

Returns.—38 bushels per acre = 21 cwt., at 9s. 8d. = £10:3s.

On these items it should be noted that the labourers were being paid at an average rate of about 32s. (36s. for horse-

man) during the period, and that labour is also included in the horse and tractor charge, as in the rotation charge and in thatching and threshing. The rotation charge represents the share of the cost of the previous cleaning crop and the manurial residues that must be passed on to succeeding crops in the rotation. Though high, because the costs were incurred when labour was dearer, it happens to be a low figure for the farm because the wheat was following vetches. The resultant cost is £10:18:6 per acre, and the returns 21 cwts. per acre at 9s. 8d. per cwt. or £10:3s. As the straw goes to farmyard manure and is not charged, there is thus a loss of 15s. 9d. per acre and nothing for management or interest on capital. There is nothing abnormal about this example, which indeed was a cheaply grown crop on a well-managed farm working on a large scale.

What prospect is there of amending these results, either by increasing the returns or diminishing the costs? Except in so far as a more favourable season might have given a bigger crop, any policy aiming at an increased yield is not likely to be successful. The land is second-rate, and the average yield in the district is about 17 rather than 21 cwts. per acre. The style of farming is already too high for the land at prevailing prices; if a profit is to be secured, it will have to come from action in the other direction, by cutting expenditure. The cost of labour is now lower, 28s. instead of 32s., and as there are about two weeks' labour in the year's bill, the saving would amount to 8s. per acre. Seed, again, will be about 2s. 6d. cheaper. Of the other items the only ones susceptible of much reduction are the rotation costs and the fertiliser bill. It is here the attack will have to be made, even though it will result in a lower yield. The high farming that has been practised introduces a root crop in the rotation which is both thoroughly cultivated and heavily manured, and this throws a very heavy charge upon the other crops in the rotation. The sheep that consume the roots cannot pay for the whole cost of growing the crop. Part of the cultivation, as representing the value of the cleaning the land gets from the root crop, and the cost of the manures used for growing the roots,

and again the manure value of the corn that was consumed by the sheep with the roots, must be carried forward. This charge falls even more heavily upon the barley and oats immediately following the roots than on the wheat, but it is still a large item, over 15 per cent, of the total cost of growing the latter crop. In order to secure a lower rate of expenditure it will therefore be necessary to reduce the root crop to a minimum and substitute the cheaper rape and kale for swedes and turnips. Again, the "seeds" crop of clovers and grasses may be left down two years instead of one, in order to provide cheap grazing instead of the expensive root crop. In this way the charge on the wheat crop for the rotation can be reduced from 34s. to something like 10s. per acre. Again, the manure bill can be cut down by at least 15s. per acre, and as we are aiming at a lower standard of cultivation, a little labour can be saved on the operations, amounting to perhaps 10s. an acre. In all it should be possible to effect economies of about 59s. per acre, economies which will be accompanied by a reduction of yield of some 3 cwts. per acre, making the returns 29s. less. Nevertheless, we may hope to convert a loss of 16s. per acre into a profit of 14s., and so continue the business.

It is needful to emphasise the point that if the land is not paying when it grows 38 bushels to the acre it cannot be made profitable by forcing up the yield to 46 bushels, because the extra manure and cultivation necessary will cost far more than the 43s. gained. On the other hand, a considerable saving may be effected without causing a corresponding reduction of crop, since the land itself always does most of the work. The prairie farmer will put in his wheat with a single act of cultivation and harvest it again in another single operation, so that without assistance he is able to grow upwards of 100 acres of wheat. He may not grow more than 20 bushels to the acre, *i.e.* 2000 bushels per man, whereas by our methods it takes three men to grow 100 acres of wheat at an average production of 32 bushels per acre, *i.e.* little more than 100 bushels per man. The cheap wheat that reaches us comes from

countries with a low average yield per acre, from Canada with 18.4 bushels per acre, the U.S.A. with 13.5 bushels per acre, Argentina, with 10.5 bushels per acre, Australia with 11.4 bushels per acre. This competition cannot be met by more intensive farming, but by getting nearer to their prairie methods of a low yield per acre but a high production per man. In the case we have been considering the economies that are necessary to restore the farm to a paying proposition fall more on the other crops in the rotation than on the wheat, and consist in the reduction and cheapening of the root crops, the longer duration of the seeds, the substitution of a grass flock for the closely folded arable sheep. All this calls for less labour; the four men per 100 acres the farm is at present carrying can be reduced to three or a little less, thus saving 15s. an acre or thereabouts on labour, with corresponding reductions in fertilisers, horses, and tradesmen's bills.

This is the problem as it presents itself to the individual farmer; with low prices he must cut his costs, and his first reduction is likely to be on the labour he employs. If his land compels him to stick to arable farming, he can farm less intensively; in most cases he has the still easier alternative of putting some of it down to grass, when the density of employment will drop down to one man per 100 acres or less. Though only an individual case, it is typical. The farmer can protect himself when prices fall by reducing his expenditure, being content with a lower production that yet leaves a margin of profit. If he attempts to intensify production *without change of method* the law of diminishing returns comes into play, the larger output becomes more costly per unit, and the loss on the operation is increased. The farmer may, of course, increase his output without extra cost by putting in greater skill or by a change of system, but as it is hardly within the power of the whole mixed population of farmers to effect sudden adjustments of that kind, it must be expected that falling prices will in general be followed by a decline in gross production and in employment. If farming methods were inflexible, falling prices would first affect rent, reducing it to

zero on the poorest land, and then successively throwing other types of land out of cultivation. Actually, as the history of the 1880-95 depression shows, little of such land as is farmed in Great Britain actually goes out of use or ceases to be worth a rent. Though very many farmers were ruined in the process, the agricultural community met that depression in the main by laying down land to grass (4,760,000 acres more permanent grass in 1912 than in 1872) and reducing the amount of labour employed (1,019,464 in 1871 as against 727,375 in 1901). At the same time, they reduced the style or intensity of the farming even on the land retained under the plough. This is evident from the fact that the average yield per acre of the staple crops remained approximately constant during the period (1885-1905), though the better land only was being retained under the plough and new varieties were being introduced of higher cropping capacity. This general decline in production represented the response of agriculture as a whole to the condition of falling prices, though at the same time individuals were making progress and intensifying their production by a change of system, *e.g.* by turning over to dairying or by taking advantage of particular favourable markets, as in potato growing and market gardening. At the end of the period—say 1905 or so, rents had fallen, though very rarely to zero, but the general body of farmers were not earning less from their business than the corresponding occupiers of the land in the sixties of last century. If, then, the current fall of prices has come to stay, we must expect that the present race of farmers will meet it in the same way as their predecessors did forty years earlier; there will follow a smaller gross production and less men employed upon the land.

This general conclusion may be further illustrated by some figures supplied by Dr. Ruston of the University of Leeds, and obtained by generalising the costings of two groups of Yorkshire farms in 1922-23, one predominantly arable, the other mainly grass. I have omitted his intermediate group, in which some disturbing factors come into play.

	Arable Farms, less than $\frac{1}{2}$ Grass.	Grass Farms, less than $\frac{1}{2}$ Arable.
Gross output per acre	£8 8 0	£4 10 2
Food produced per acre in large calories	1232	274
Net output per acre (margin for rent, labour, and farmer) . .	£1 17 11	£1 18 11
Men employed per 100 acres . .	2.7	1.1
Labour bill per acre	£3 2 9	£1 4 1
Gross output per man	£282 0 0	£412 0 0
Net output per man	£64 14 0	£204 13 9
Capital per acre	£14 16 1	£7 14 11
Gross profit or loss per acre . .	-£2 6 11	£0 4 2

On the arable farms the net output would only pay for about 60 per cent of the labour bill, and leave nothing for rent, interest on capital, or remuneration for the farmer; indeed the farmer was out of pocket by more than twice the amount of rent he paid.

Accepting this as the general trend of events, consequent on falling prices, it remains to be discussed whether the premises are true for the present situation, *e.g.* whether we are to expect the continuance of low prices, or whether there are new circumstances to be considered which will modify our conclusions. The first point requiring examination is whether prices are now low, relatively or absolutely. The index number for agricultural produce stands at 157 as compared with 100 in 1911-13. Particular articles stand as follows when January 1924 is compared with January 1914:

	Jan. 1914.	Jan. 1924.	Jan. 1914, 100.
	s. d.	s. d.	Relative Values.
Wheat per cwt.	7 6	10 3	137
Barley per cwt. (malting) .	8 2	12 3	150
Oats per cwt. (white) . .	7 6	11 0	147
Potatoes per ton	70 0	190 0	265
Beef, Scotch, per stone . .	9 4	13 8	146
Mutton per lb.	0 10 $\frac{3}{4}$	1 5	158
Pork per stone (porked) .	9 6	12 0	126
Milk (surplus) per gall. .	0 10	1 4	160
Eggs per 120	16 10	28 0	166
Wool per lb. (South Down)	1 4	2 3 $\frac{3}{4}$	173

The main factor in a farmer's expenditure is labour, which on arable land amounts to something like 25 per cent of the total disbursements. Since 1914 labour in the predominantly arable counties has risen from 18s. to 28s., *i.e.* by about 56 per cent, and hours are less. Of his other outgoings rent remains about the same, rates have risen, horse labour (being largely the cost of oats) has risen by nearly 50 per cent, feeding stuffs by about the same amount, tradesmen's bills in about the same proportion. Fertilisers, on the other hand, are actually a little cheaper. This brief analysis suggests that while prices are low for the arable farmer who is dependent chiefly on selling wheat and barley, they are relatively better than in 1914 for the producers of sheep, milk, and eggs, especially where the labour bill is low, as with grass-land sheep and summer milk production upon grass. This leads one to the conclusion that the present depression is less an affair of absolute low prices than a result of the sudden deflation of money that began in 1921, the crisis having been rendered more acute with agricultural produce by the very long lag that intervenes between the preparation of a crop and its realisation. Wheat, for example, is always carrying costs incurred more than a year before its sale. This last "depression" has been mainly due to deflation, and also to a succession of bad seasons, which would have meant generally unprofitable years even if prices had been normal.

Secondly, is the present range of prices likely to persist or to go still lower? Looking at the question broadly, the great fall in prices of the eighties and nineties of last century was due to the coming to fruition of the railway development and steamship construction which opened out the prairie countries of North America, the Argentine, and Australia. The crop-producing areas of the world were suddenly expanded, and new machinery, like the self-binder, rendered it possible to work them cheaply. Where is there the same possibility of unlimited expansion now? Before the War, the United States had almost grown up to its own food supply, and though the wheat area expanded greatly under the war stimulus, that expansion was not

permanently justified by the soil and climate, and to-day is being attended by widespread ruin. Canada effected an even greater expansion, but it is by no means certain whether in the average of seasons it can be maintained. The unknown factor is Russia—a considerable exporter before the War, she is now barely able to feed her own diminished population. The latent resources are there both in European and Asiatic Russia ; it may, however, be expected that it will take some years before she has the old or a still greater exportable surplus.

It is necessary to examine the wheat position still more closely. Before the War the main producing countries with exportable surpluses were the United States, Canada, Russia, Roumania, Argentina, Australia, and from time to time India. As the table on the following page shows, the United States and Canada have enormously increased their production, Russia and the Balkans have ceased to export, though Russia is re-entering the market this year, while India has also resumed exportation after an interval. The available surplus is greater than in 1909-13 by 10-15 million quarters as long as the United States and Canada maintain their present production. Turning now to the importing European countries, we find that Great Britain and Ireland, France, Germany, Italy have to a great measure recovered their pre-War production. Italy has actually increased hers, but owing to increased population is still in need of importations on the former scale. Western Europe, indeed, needs as much wheat from abroad as before, more, if the underfed populations that exist, in Germany and some other central European states, could exert an effective demand. But as there was some surplus of wheat in the world in the 1909-13 period, there is at least that surplus now even if Russia is still reckoned as a non-exporter. The only factor working in the other direction is the increasing substitution of wheat for rice among the Far Eastern peoples, but it is difficult to estimate that demand.

EXPORTS, PRODUCTION, AND IMPORTS OF WHEAT IN THOUSAND
QUARTERS OF 480 LB. (INCLUDES FLOUR RECKONED AS WHEAT.)

Exports

	1909-13.	1920-21.	1921-22.	1922-23.	1923-24.
United States	13,100	} 45,000 {	30,600	10 months only	Crop 10 %
Canada	12,000		23,300	56,900	less
Russia	19,000	..	..	..	Crop 17 %
Balkan States	7,700	100	?	?	more
Argentina	10,200	15,000	24,500	17,300	Crop 37 %
Australia	6,400	10,000	7,800	6,000	more
Other countries	7,100	4,500	?	4,300	Crop 12 %
	75,600	74,600	90,000 ?	84,500 ?	..

Production

United Kingdom	7,400	7,110	9,200	8,200	7,200
France	39,700	22,500	40,300	30,350	36,310
Germany	19,000	10,990	13,400	9,000	13,430
Italy	22,800	17,500	24,000	21,900	25,100
Other European countries	52,790	51,400	64,626	61,000	74,000
	141,690	109,800	151,526	130,450	159,040

Imports

United Kingdom	27,200	26,500	26,080	(10 months) 21,000	..
France	5,800	9,000	2,130	4,540	..
Germany	8,600	7,500	8,670	4,300	..
Italy	6,600	10,000	12,500	11,570	..

The situation may thus be summed up as follows :

- (1) There is a large surplus production from the Americans, but in the face of the widespread ruin among farmers in some of the United States areas and the appreciation of the dollar, it is not probable that the American wheat grower can continue to produce for export.
- (2) The European demand for wheat is as great as ever, and would increase under more prosperous and settled conditions.
- (3) Russia is a potential exporter, which may to some extent be set off by an increasing demand for wheat in the Far East.

Taking all things into account, no marked increase in the price of wheat can be anticipated for some years to come, and as cereal prices generally move more or less in harmony with that of wheat, it would be unsafe to base our farming system for the immediate future on an expectation of rising cereal prices. On the other hand, unless conditions in Russia change rapidly and markedly, surplus production is not likely to increase and prices will grow no worse.

Accepting that forecasts of the future trend of prices do not justify such an intensification of British farming as will result in an appreciable increase of employment, are there any other means whereby we may avoid the operation of the law of diminishing returns? The law must always be latent, but we may escape from its consequences if we can so alter our method of farming as to relieve it of one or other of the factors of economic pressure. For example, we have seen that whereas the cost of labour since 1914 has increased by a greater percentage than has the price of wheat, the ratio of increase in the price of eggs is greater than the corresponding increase of labour costs. Hence, with labour as the chief factor in the cost of production, eggs are relatively a more paying proposition than wheat. Broadly, this improved ratio is shown by all meat products, especially mutton, wool, and milk. As regards potatoes, fruit, and vegetables, the position is more obscure. The fluctuations of the market for potatoes, owing to an excessive production in 1922, and a small crop in 1923, are too violent to admit of any conclusions, and fruit and vegetables have equally been subject to troubles from temporary gluts and crop failures due to seasonal causes. But the general conclusion does suggest itself that the British farmer must shift his production away from wheat and barley in the direction of animal products of the highest quality, and of other articles which are naturally protected by the difficulties of transport. Catering as he does for a population that draws more than half its food from overseas sources, there is room for the British farmer where he can come in at the top. An increasing section of the public are demanding the best,

and have been surprisingly able to continue to pay for it. For example, the best Wiltshire bacon and the best types of English cheese maintain a remarkable superiority of price over the large standardised supplies of foreign produce of the same character. But it is only a small proportion of the British output that is of this "best" quality; too much of the bulk of English bacon falls below the uniform high level of Danish and Swedish bacon. As regards bacon, cheese, and eggs, the field that may be won back against foreign competition is very great, but with many other products it is uncertain how much additional material the market can absorb. Milk, for example, has been very profitable of late, but it is questionable whether the point has not been reached when the supply has overtaken the demand. Potentially the market is still capable of vast expansion; milk is a relatively cheap food, and the public ought in their own interests, and may be induced, to consume a greater daily allowance. A Milk Publicity Council is conducting a campaign for the increased use of milk; it remains to be seen whether its efforts will obviate the risk of over-production that is threatened. With other products the market is much more readily saturated; for example, our acreage under potatoes is able to supply our normal demand. A slight increase in the area planted, coupled with an abundant yield such as occurred in 1922, results in a disastrous fall in price. *Per contra*, a low yield this year, on an acreage reduced by 16 per cent, has sent the price soaring up to 190s. against 70s. at the corresponding period last year. The fluctuations in potato prices are aggravated by the fact that, owing to tariff barriers and other restrictions, we can never dispose of our superfluities by exportation, whereas we are always open to imports, which arrived even last season and assisted to break the market at a critical time. As regards fruit and vegetables, it is often feared that the market may become saturated, but the demands of the public have been steadily increasing for years past, and the rising supplies have on the whole been well absorbed. There is room, then, for an intensified agriculture in certain directions, but to take full advantage

of these outlets demands skill and adaptability on the part of the farmer, and there is much land ill suited to any other form of agriculture than the normal routine practised to-day that is based on corn growing for sale. Still, even the man who must grow corn can add a second business to his cultivation, and convert his corn into meat or milk, eggs or cheese, instead of selling it against the world's competition.

In addition to change of method and a concentration on the more paying branches of farming, possible changes of system must be considered. It is held by some observers that the typical British farm of from 150 to 500 acres is no longer a useful economic unit. In its inception it did represent an advance in organisation upon the then existing system of small yeomen ; it was an early and comparatively efficient form of the industrialisation of agricultural production, and it enabled the country to provide food for the great growth of population from 1780 or so down to 1860. The large tenant farmers of that period, with all their capital free for their business, could embark upon improvement, and were the authors of great technical advances in farming such as drainage, the use of fertilisers and feeding stuffs, the introduction of better varieties of crops, and the development of live stock. From this point of view the organisation of large-scale production has not gone far enough, and the economic unit of to-day should be the 2000-5000 acre farm. The typical British farm carries from five to twenty labourers, and it is argued that a " master " is not fully employed in the administration of such a team. British farming, it is urged, is carrying too great a burden at the top : its overhead charge for management, in other words the income the farmer expects, is too great for the size of the exploitation, and out of proportion to the effort expended in directing the small staff of labourers employed. The great farm will enjoy economies in the employment of machinery, in organisation of labour, in capital reserves that permit of slow maturing amelioration of the land and estate, and in a more wholesale scale of marketing. By approximating to a large business, with its hierarchy of employees and assistant managers, it

will recruit its ultimate directors from a class now almost excluded from farming—the young men with ability but no capital. It might help, too, towards better prospects for the labourers, both on the general ground that the big employer is found by experience to be more able to pay good wages, and as offering a means of advancement by creating intermediate stages between the labourer and the manager. None the less, movement in this direction is likely to be slow. Few capitalists have any belief in farming as a dividend-earning proposition; the social and landowning system of the country makes the acquisition of suitable areas for exploitation difficult, and it is only by experience upon farms of such a magnitude that the type of man capable of managing a 5000-acre business could be matured. At present there are very few men to whom such a venture could with confidence be entrusted, though one successful manager would soon train others. Nor would such a development increase employment at the outset. One of the advantages of large-scale farming is its economy in man power, though that economy would in its turn render more intensive methods practicable, with a consequent increase in the labour employed.

Other observers of agriculture look for its development in exactly the opposite direction, and aim at the creation of a peasant system of one-man or one-family farms. They point to the fact that the division of the land has resulted in an intensification of method and a greater gross production. Sometimes the instances quoted are fallacious, as when a grazing farm in the Vale of Evesham is cut up into market gardens growing plums and asparagus. Such a more intensive usage of the land is equally possible to the large holder if he has the capital, and large-scale working is just as economical in market gardening as in corn growing. But there are many cases when the small holder will manage to live on a method of farming the large occupier finds unremunerative, because the small holder will give an output of labour and skill that is disproportionate to his cash return. If the large occupier could get the same return in labour for his expenditure on wages, his farming

would be prosperous enough. It is this psychological fact that justifies the small holding movement ; as one statesman observed from his colonial experience : “ The family farm is the only way I know of getting a full day’s work out of a man,” and he might have added out of his wife and children also. It is largely this attitude towards life which has made of Denmark the model of agricultural production ; the standard of life of their peasants is by no means low, but they give a degree of actual physical labour and of applied intelligence for which the Englishman would demand a vastly higher return. We have further to consider that there is an immense social driving power behind the small-holding movement, arising from the desire for independence, the insistence upon equality, and the passionate feeling in a rural community that every man is entitled to a bit of land of his own. These feelings have split up the latifundia and changed the face of middle Europe during the last few years, and their reverberations are felt in Great Britain, where the urban point of view is more dominant. To meet this demand there is room for a considerable increase in small-holding in England. It cannot transform the face of the countryside, because economic pressure and the attractions of urban employment still bring about the secular wastage of small holdings. If we examine the number of small holdings under fifty acres in England and Wales, we find a progressive decline that has not been completely arrested by the creation of statutory small holdings under the County Council from 1908 onwards or by the settlement of ex-service men on the land which began in 1919.

	Number of Holdings between 50 acres and 1 acre in England and Wales.	Statutory Small Holdings added.	Ex-service Holdings set up.
1875	333,630*	...	...
1895	299,378	...	...
1908	287,170	} 12,871 2,581	...
1913	292,446		...
1919	272,568		} 16,700
1922	273,530	...	

Some of the wastage is due to the expansion of the towns, which progressively encroach upon the accommodation land often held by men with some other business besides their farming, but none the less in many parts of the country the small farms have been steadily shrinking in number because of their unprofitableness.

Taking all things into consideration, a return to the pre-War policy of the creation of statutory small holdings might result in the addition of some 5000 holdings a year and a net addition of employment of about one-half that number of men. But small holdings can only be located on the better land: their output must be milk, eggs, potatoes, fruit, or vegetable produce; they cannot solve the problem of cheap food for the people. Any general adoption of the family farm the world over will result in a smaller output of surplus food for sale, and a restriction of supplies for the urban population.

Whatever the system of farming, small or large, all are agreed that one of the prime conditions of better prices for the farmer is the improved organisation of marketing. Indeed, the advocates of small holdings admit that their success will be dependent upon a system of co-operative selling, otherwise the producer is at the mercy of the middlemen, and is maintained at a mere subsistence level. Though the reports of the Linlithgow Committee do not attempt to specify this or that stage in the distribution process as redundant or needlessly costly, the same tale runs through its review of all the items of agricultural produce—the huge disparity between the price accruing to the producer and that paid by the consumer. The margin would admit of prosperity to the farmer and leave the consumer at least no worse off. The whole problem is how to set up the machinery, with all the forces of inertia and custom ranged against it and in the face of the opposition of a wealthy and experienced trade, armed too as that trade is by the fact that it also handles the foreign competitive produce that constitutes more than half the food of the British population. It is no good minimising the difficulties, seeing that the producers of a particular article

have to attain to something like a monopoly before they can ensure justice to themselves. Agricultural produce does not flow into the market steadily and continuously but seasonally, hence the dominant position of the merchant who provides the storage and regulates the supply. During the past three seasons the price of English wheat has dropped, during the late autumn and early winter, four or five shillings a quarter below its proper parity, because farmers had to thresh and sell while merchants were taking a gloomy view of futures. Each time the price has recovered, but at a time when the bulk of the English wheat was out of the farmer's hands. Yet the most unwise thing an individual farmer can do is to hold his crop for a rise. Again, even in articles for which British production alone dictates the price, *e.g.* potatoes, seasonal fluctuations cause an alternation of gluts and scarcities. It needs a monopoly that not only controls the produce but also can organise alternative means of consumption, to obviate the disastrous break in prices that attends even a slight excess of production. The market is naturally inelastic, and is perhaps made more so by the unwillingness of the retailer to reduce prices proportionately when supplies are superabundant. For example, when in 1922 plums barely paid or failed to pay for picking and marketing, people were not drawn in by exceptional cheapness to make jam and bottle fruit beyond the ordinary. With such perishables consumers do not awaken to the occasion until the opportunity has passed ; a live marketing organisation would have been propagandising before the crop came on the market so that the public would have made its preparations. Undoubtedly a monopolistic control will at times have to restrict production ; as, for example, it would allow each potato-grower in a year of excess production to market only a proportion of his potatoes and turn the rest over to the pigs. This will be resented and may look to the public like waste, but it is only business—an incident in the attainment of the steady supply which is the consumers' real interest, for they stand to pay more for scarcities than they gain during gluts. But many of the

actions of a strong co-operative organisation may seem unkindly. It depends upon maintaining its monopoly, it must control and enforce loyalty by pains and penalties, by social ostracism and boycott if need be.

The attainment of anything like monopolies may seem a very long way off in this country, with its intensely individualistic farmers who always have alternative markets at their doors, but the necessary change of spirit is stirring. Farmers have of late years attained a measure of class consciousness and solidarity they never possessed before, they are gaining the will to combine, and upon that will follow the means. The spirit of co-operation is something more than an instinct of self-preservation and a desire to secure a better market, it is something that a man begins to feel is due to his self-respect; and co-operation will begin to grow in England in response to that feeling, as it has failed to grow hitherto in response to the lure of better business. But if co-operation is to be a growth, then time is required; we cannot look to it for any immediate transformation of agriculture such as will create employment.

Lastly, we must inquire into the possible effects of science upon agriculture. Are there not new crops, new processes, new fertilisers to be found which will transform production from the soil, at any rate to the extent of rendering high farming profitable? What we are seeking for is higher yields, without the accompanying acceleration of expenditure which is postulated by the law of diminishing returns—some method outside our current experience. It need not be modern magic like Mr. Wells's *Food of the Gods* or Mr. Haldane's *Porphyrococcus*, but there are justifications for more moderate expectations.

Mediaeval yields of corn on the open field system were only three- or four-fold, say 2 to 3 cwts. per acre: the introduction of clover and roots pushed them up to 12 cwts. per acre; the introduction of artificial fertilisers again raised them, between 1840 and 1860, to 18 cwts. or a ton, with some, but not a great additional expense. Some of the more recently raised varieties of wheat will give a ten per cent heavier crop than the older ones, without any extra

cost. These examples show that what in former times would have been regarded as impossible advances in crop production are now realised. Is development in agriculture only lagging behind that which has taken place with steel or textiles during the last century? Is it unwise to deny possibilities or to set bounds to the control that we may attain over nature? But agriculture and the industries are not in this respect comparable. Agriculture derives its products from processes of life, and the power that has been acquired over inert matter has never been gained over the living organism. In particular, success has been small in all attempts to speed up the vital processes, we are very far from being able to grow two crops in one season. As far as agriculture is concerned, no spectacular advances in productive power are probable, and if they did occur, they would soon be common to our competitors as to ourselves, and only intensify the price competition that limits output and employment to-day. None the less, progress in agriculture is being attained through scientific research, and will continue. Even from the competitive point of view such progress will be a gain to this country, which is near the source and possesses the men to take advantage of knowledge, but one may doubt whether the progress will be swift or revolutionary. At any rate, it offers no prospect for the relief of immediate unemployment, indeed ultimately it may make for less employment in agriculture. Clearly that community is at an advantage which needs to employ the smallest proportion of its men in growing food, and has the greater margin available for producing other items of wealth.

But even if we cannot count upon new discoveries to create agricultural wealth of a type undreamt of, there is still great scope for the application of science and knowledge to current agriculture. As the Prime Minister remarked the other day, if the majority of farmers farmed as skilfully as the few best ones in each district, we should hear little of agricultural depression. This is the great opportunity of escaping from the consequences of the law of diminishing returns ; more skill and better management

obtain increased returns without adding to the expenditure. There is no reason to suppose that the average level of capacity among masters or men is lower in agriculture than it is in commerce or the industries, save that in England a process of selection in the wrong direction has been operative for two or three generations. But without making any assumptions as to the average ability of farmers as compared with stockbrokers or grocers, there is room for great betterment by education, and this will make for the expansion of the industry and greater employment. This applies not to farmers only, but, with special force, to labourers, for the worker on a farm counts in the output in a way the minder of an automatic machine never can equal. A good cowman can add a hundred gallons to the annual production of a cow, and it is the calling out of this sort of individuality that makes for the success of the smallholder. It has been said before that a large measure of the success of Denmark as an agricultural producer is due to the higher standard of technical performance that is given for the same money by masters and men in that country, where we find masters with a college education working a 70-acre farm, and men that in their own line are as technically accomplished as their masters.

This is the sure line of progress for British farming, but its action is slow, and it can do little to relieve the immediate crisis of unemployment.

To summarise—

1. The present surplus of population cannot be diverted into agriculture, or set to live upon the land that is now unoccupied or farmed at a low level. They might be able to subsist, but with a standard of living far below anything now prevailing in commerce or industry.

2. The normal farming of the country cannot be intensified so as to employ more men, at the current range of prices for agricultural produce. Should prices be maintained at the present level, it is likely there will be some lowering of the style of farming and reduction in the volume of employment on the land, but there are indications that

the demand for food on the part of the world's population will become more insistent, so as to call for higher farming and more employment.

3. Some alleviation of the progressive flight from the land in Great Britain may be looked for in two directions—the exploitation of the individual's working capacity that follows on the creation of small holdings, and better education for farmers and farm workers.

FUTURE OF THE COAL INDUSTRY IN RELATION TO UNEMPLOYMENT

WALLACE THORNEYCROFT

Persons employed in the Coal Industry

DURING the first half of the year 1923, practically the whole body of workmen who usually earn their livelihood by working in and about collieries were employed, and it may fairly be stated that there was no abnormal unemployment in the industry.

The following table gives the number of persons employed in and about the coal pits subdivided into the main coal-fields of the United Kingdom during the month of March 1923 and the corresponding figures for the average of the year 1913.

	March 1923.	Average, 1913.
Scotland	133,404	140,834
Northumberland and Durham	221,582	226,806
Midland Counties	343,412	324,730
Lancashire, Cheshire and North Wales	151,864	156,941
South Wales	221,303	233,083
Other districts	24,224	27,720
	<hr/> 1,095,789	<hr/> 1,110,114

These numbers do not include those men working at coke ovens, brickworks, or other industries carried on adjacent and ancillary to collieries by the same owner. Diagram No. 1 shows the number of persons employed for thirty years, the output per person employed, and the index number representing the earnings of these workmen, taking the year 1900 as the basis 100.

Wages

It must be noted that during the year 1900 the wages earned in the mining industry were higher than during any years since 1872. The wages index number for the year 1895, which was the period when the cost of living was at the lowest rate known, was 72·5.

The maximum number employed was at the end of the year 1920 and the beginning of 1921; that is, before the disastrous strike, which began on 1st April 1921 and continued until July of that year.

A number of men of all sorts and kinds were drawn into the pits during the War to replace, so far as possible, the large number of the regular miners who volunteered in the early part of the War and the small number who were called up in 1918.

Practically all the demobilised miners were promptly re-employed, which accounts for the rapid increase in numbers after the War.

The decrease following the strike of 1921 is due to the fact that a number of the best of the men—thrifty good workers—have emigrated to America and elsewhere, and many of those who came into the pits during the War and who have failed to become efficient miners have been dismissed, or preferred to accept unemployment pay. It is believed that the majority of the 44,000 persons returned in March as unemployed miners are those who prefer to accept unemployment pay rather than work, as in October 78,000 additional men were at work in the coal mines as compared with March 1923, which proves beyond dispute that there were opportunities for the unemployed to obtain work.

Output and Value

Diagram No. 2 shows the actual output raised and value per ton at pit since 1890. The average increase in output before the War was between four and five million tons per year, with consequential increase in numbers employed, and although it is true that there was a fall in the output in the

years following those of high prices, when outputs would be forced up to the maximum capacity of the existing pits, it is certain that the development of lower seams and new areas was accelerated by the comparative prosperity of the industry during such years; but the consequent increased capacity for output was not registered by actual output until the market expanded, and for a time the demand was equal to, or slightly in excess of supply with consequent rise of prices again.

The War, of course, stopped normal development, and since the War, Government control, demand for nationalisation, the seven hours day, general lack of confidence in the prospects of the world's trade and high prices of labour and all materials required in the development of collieries, together with high rate of taxation, have prevented capital being spent in new developments as rapidly as it would have been normally.

Generally speaking, most colliery companies have considerable sums of money set aside for the purpose of carrying out schemes of development already prepared, but these schemes remain in their pigeon-holes awaiting the time when the directors of the companies feel justified in spending their shareholders' money, having regard to considerations just stated.

Reserves of Coal

The reserves of coal are ample, and in the various areas mentioned the quantities approximate to the following figures. The output in 1913 is also stated, and the apparent life at that output—all in millions of tons.

	Reserves (million tons).	1913 Output.	Per cent.	Apparent Life. Years.
Scotland	20,000	42·456	14·78	470
Northumberland and Dur- ham.	12,000	56·352	19·62	213
Midland Counties . . .	96,000	90·411	31·47	1060
Lancs, Cheshire and North Wales	10,000	35·933	12·50	278
South Wales	37,000	56·830	19·77	650
Other districts	10,000	5·346	1·86	1870
	185,000	287·329	100·00	645

The corresponding output figures for March 1923 are as follows :

		Per cent.
Scotland	3,433,903	14·52
Northumberland and Durham	4,461,452	18·86
Midlands	8,026,981	33·93
Lancashire and North Wales .	2,631,637	11·12
South Wales	4,670,317	19·74
Other Districts	432,155	1·83
	<hr/> 23,656,445	<hr/> 100·00

This output is at the rate of about 266,000,000 tons per year, which was about the output of the year 1907, when 918,400 persons were employed and some profits being earned.

The position in March, therefore, was that we were employing 177,300 or 19·3 per cent more persons than we did in 1907 to raise the same output of coal. The index number for wages in March 1923 was 149, compared with 90·3 in 1907. The average price realised per ton of coal raised was 9s. in 1907, against 17s. 10d. in March 1923.

Cost

During the year 1922 the ascertainment of results made for the purpose of regulating wages brings out the following figures :

Wages cost as per ascertainment	11/ 0·75
Other costs	5/ 6·36
Profit	10·61
	<hr/> 17/ 5·72

Included in other costs are national insurance, workmen's compensation, and the salaries of the clerical, technical, and commercial staff, which, of course, are wages in one form or other, and if they were added to the wages cost it would be apparent that it would amount to approximately 75 per cent of the realised value of the coal.

Future Development and its Effect on other Industries

Broadly, it may be stated that the districts in which the most rapid development is likely are the Midland district

of England east of a line Leeds, Sheffield, Derby, the East of Scotland, the western part of the South Wales Coalfields and Kent.

In certain districts, such as the Clyde Valley, and parts of Lancashire, the 1913 output can, with difficulty, be maintained, and that only by working seams of coal inferior in thickness or quality, and consequently the old-established industries in such districts will have to draw their fuel supply from greater distances in the future and will have to pay relatively higher prices for it.

There will therefore be a tendency for new industries to develop in the districts mentioned if the increased population of this country is to be employed.

There is no doubt that the relatively cheap supply of coal in the past stimulated most industries, and one problem of unemployment may be fairly stated by the question :

At what level of coal prices can the industrial expansion of this country proceed as it did before the War ?

Cost of Production of Coal in Relation to other Industries

All industries are affected, and the iron and steel industry, which is most acutely interested, will be referred to later.

Before prices can be reduced costs must be reduced.

As wages paid in some form or other represent round about 75 per cent of the cost of raising coal, it is obvious that the rate of wages paid to miners is the chief factor in cost of production, but it is manifestly unfair even to suggest that miners' wages should be reduced to rates relatively lower than those paid to other workmen in order to provide cheap coal to enable other industries to be carried on. The employers in the coal industry would resent that as much as the miners.

In declining recently to increase the guarantee that miners' wages should not fall in general below the level of 20 per cent above 1914, the coal owners have before them the effect of a higher guarantee on the other industries

rather than the effect upon the profits of the coal trade itself.¹

It may be that a general reduction of wages all round may be necessary before unemployment is reduced to normal proportions, but it is certain that many men employed in industries or occupations that are not up against world prices are now being paid wages at rates that are relatively higher, compared with pre-War, than their fellow-workmen in industries which do have to compete in the world's market.

It is therefore necessary to review other causes of the high cost of coal. Legislation materially affects the cost of coal, and this is reflected in the output per person employed. (See Diagram No. 1.)

Seven Hours Act

By far the most expensive Act of Parliament is the Seven Hours Act, which raises the cost of production by about 2s. 6d. per ton of commercially disposable coal when wages are at the rates guaranteed by the 1921 Agreement. This Act was passed as one of the results of the first stage of the Sankey Commission, which occupied only ten days. It is safe to say that the economic results which were bound to follow reduction of hours from eight to seven were not seriously considered at all. The wave of optimism as to the future prospects of the trade of this country, fostered by politicians and echoed by many business men as well as by the general public, was a potent reason for the passing of the Seven Hours Act, and it is doubtful if the general public yet understand the full effect of that measure, followed as it was by reduction of the hours worked by practically all the productive and distributive labour in the country.

The loss of productive capacity in the coal industry, due to reduction of hours, is comparatively easily measured, but the loss of productive capacity in all occupations is most difficult to measure and appreciate. In 1919-20

¹ This was written in November 1923, and since that date negotiations between the coal owners and the miners have resulted in a higher wage being guaranteed.

many politicians and others argued that no person should be employed in any occupations that did not permit of rates of wages being paid that would support a standard of living on a much improved basis compared with the standard of living before the War.

Many public bodies employing labour in non-competitive work adopted this idea, which also underlies the principle of regulating wages by the cost of living.

The results of this idea and policy are now apparent.

Safety Legislation

Legislation directed to increased safety in mines also adds directly to costs of production. In the main, safety legislation is enforcing of measures taken for reducing accidents at the best managed mines in all mines in the country, and apart from a few costly fads introduced into the 1911 Act, it is good, and has made the British mines the safest in the world. (See Diagram No. 3.)

Finance Act

The remaining type of permanent legislation that affects the cost of coal and its development is to be found in the Finance Acts.

No depreciation is allowed on the money spent on sinking shafts or on the expensive buildings and houses required by a modern colliery, and the redemption funds required to replace the capital literally sunk in pits and spent on buildings have to be provided out of profits, after the income tax has been paid on such profits. Consequently the charge for redemption of capital is materially increased. For modern collieries something like £2 per ton of eventual annual output represents the capital required for shafts, buildings, machinery, and workmen's houses; generally speaking, about one-third of this capital will be spent on machinery on which depreciation allowance is permitted by the Finance Acts.

Assuming the life of the new colliery is long enough to permit of redemption at the rate of $1\frac{1}{2}$ per cent per annum,

and income tax and Corporation profits tax together take 5s. per £1 of profit, the cost per ton for redemption amounts to about 7¼d. per ton of annual output compared to less than 3d. before the War, with income tax at 2s. and the cost of equipment and houses about one-half of to-day's cost.

It must be noted that the cost of redemption of capital must come out of the owners' profits in terms of the 1921 Agreement.

Temporary Legislation

The temporary legislation in respect of "unemployment pay" no doubt accounts for a part of the decrease in the number of men employed in the industry since the strike of 1921, but cannot be said to have had much influence on cost of production, as the output available exceeded the demand since the strike, except during the spring of the year 1923, when the reduction of output in Germany caused a shortage of the world's supply of coal, with resulting temporary rise in price, which was of course followed by increased profit to the owners and higher wages to the miners, both of which were very acceptable to both parties, whose interests are identical except in the matter of the division of the profits of the trade.

Fortunately the temporary coal control legislation, which disorganised the coal industry, is now repealed, and free market conditions govern the sale and distribution of coal all the world over except in France and Germany. No better answer would be possible to the charges of inefficiency made against the industry at the time of the Sankey Commission and thereafter than the remarkable fact that, notwithstanding the disorganisation caused by amateur control and followed by the Seven Hours Act, the efficiency of the industry was such that output at rate of 266 million tons per annum was raised in the spring of 1923, and is still increasing; and, what is more important, the output per person employed is also increasing owing to the introduction of more machinery at the face. Unfortunately the possible reduction of cost that is practicable by

introduction of machinery is small. There are some people who argue that wholesale amalgamation of coal-producing companies would lower the cost of production, but their arguments are not founded upon facts. A very considerable quantity of coal is efficiently produced and profits earned by a large number of small concerns, and while well-designed amalgamation of such size as to be within the capacity of one head to manage without "red tape" control is no doubt economical for many reasons, any attempt to force amalgamations or nationalisation of the mines will be disastrous.

Foreign Trade

The world shortage of coal during the War and during the period of control stimulated the development of coal, oil, and water power in many parts of the world, and consequently affected our export trade, which will be referred to later.

The relation between costs and selling prices in the coal trade are remarkably close. At the bottom they are governed by cost alone, and above that by the world's prices, which, of course, are fixed by the free action of the laws of supply and demand.

It is sometimes argued that export prices, which generally control home prices, are run down by competition between British producers and exporters of coal. This argument will not stand close examination. A reduction in f.o.b. prices extends the distance to which British coal can be delivered in competition with other coals, or commands the market at some particular place, and so widens the market and tends to bring supply and demand into equilibrium again. If the argument were sound it would create an irresistible demand for the reimposition of the export tax on coal shipped from the United Kingdom. When that tax was imposed in 1901 the market was falling, and there is no doubt that the tax was paid by British coal owners, exporting merchants, and shipowners. It was abandoned on a rising market when home demand was

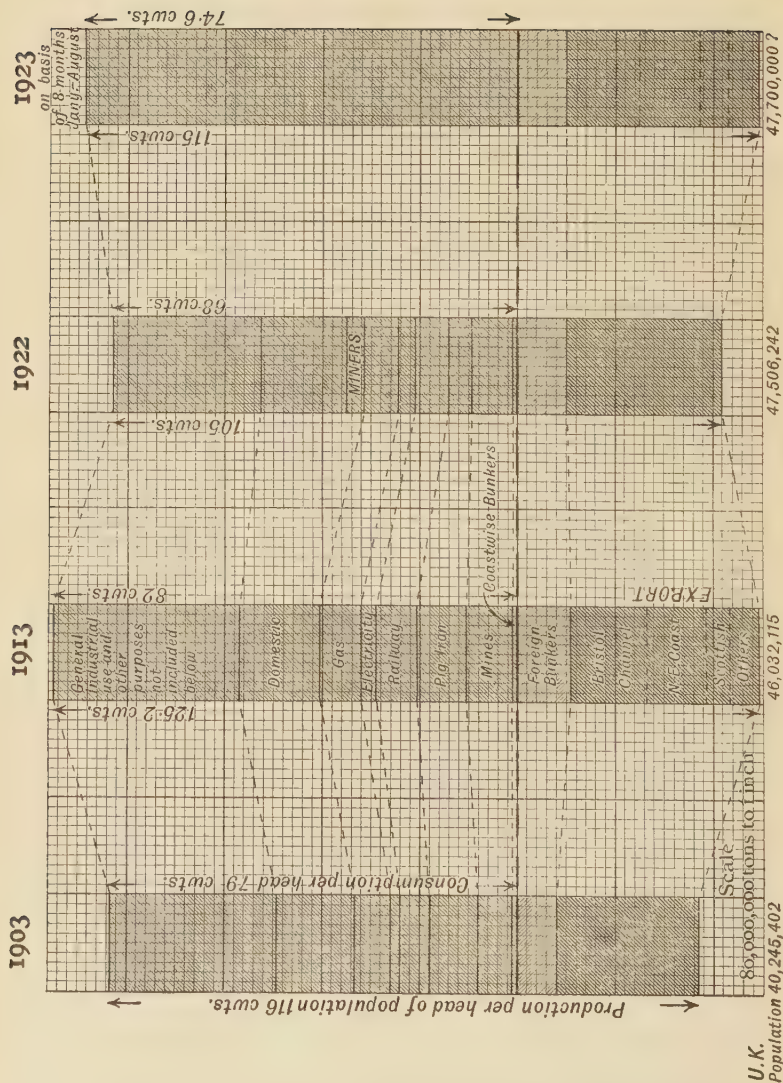


DIAGRAM No. 4.

good, and temporarily part of the tax might have been extracted from the foreign consumer.

Disposal of British Output

Diagram No. 4 shows roughly how British coal is disposed of.

The interesting feature of this diagram, which is based upon similar diagrams produced by the Mines Department, is the production and consumption per head of population in the periods illustrated.

In 1923 we are producing and consuming slightly less than we did in 1903. What we produce per head of population is the contribution of the coal industry to the general wealth of the nation, but the standard of living of the population is undoubtedly much higher now than it was in 1903.

What we consume is indicative of the activity of other industries dependent upon coal for the power they require.

In 1922 we appear to have consumed about 2 million tons less for general industrial purposes, while the population was about $7\frac{1}{2}$ millions greater. No doubt a part of this reduced quantity is due to increased efficiency in the use of coal and to the increase in the use of electricity for power purposes, the increasing amount of coal used for the generation of this electricity being included in the diagram separately.

Nevertheless the indication is clear, and shows that other industries are not producing so much per head of population, and the item shown for pig-iron is sharply brought out. Only about half the fuel used for production of pig-iron was consumed in 1922 compared with 1903.

Assuming that our industries will sooner or later again be able to produce per head of population on the 1913 basis, which is necessary before we can economically support the 1913 standard of living, it is evident that our exports of coal would have to be materially reduced or the production materially increased. A study of the destination of our exports during 1923 indicates that a reduction in exports

below the present rate is certain as soon as German output in the Ruhr district recovers.

Distribution

During the War the organisation which had grown up in the various districts for the distribution of coal was upset nearly as much as the production side of the industry.

While many large consumers of coal buy direct from the producing coal owners, and delivery is given direct from the colliery to the works siding, a large proportion of the business of distribution is in the hands of merchants.

Many buyers prefer to purchase their supplies through merchants, and will not buy direct, and in cases where delivery cannot be taken by the consumer in trucks and the coal has to be disloaded into carts, as is the case with all household coal, the intervention of merchants is a necessity and economically sound.

Distributors of coal were much more generously treated by the control regulations than the producers, and it is not unfair to say that this led to extravagance which has not yet been eliminated by competition.

The wages of carters and other men handling the coal and doing the clerical work were raised in greater proportion than those of the miners, and their hours were reduced.

These facts, together with the increase in railway rates, account for the great increase in price to the consumer of household coal especially.

Export

Our export trade, which is essential to provide cargo for ships returning with food to this country, has been recovered to some extent, but is not yet in a satisfactory condition.

Under the stress and strain of competition since control ceased, freights have been reduced and coal has been sold for export at prices that yielded little or no profit, or even at a loss, in order to get back the trade, and the extent to which the efforts of the coal owners, coal exporters, and

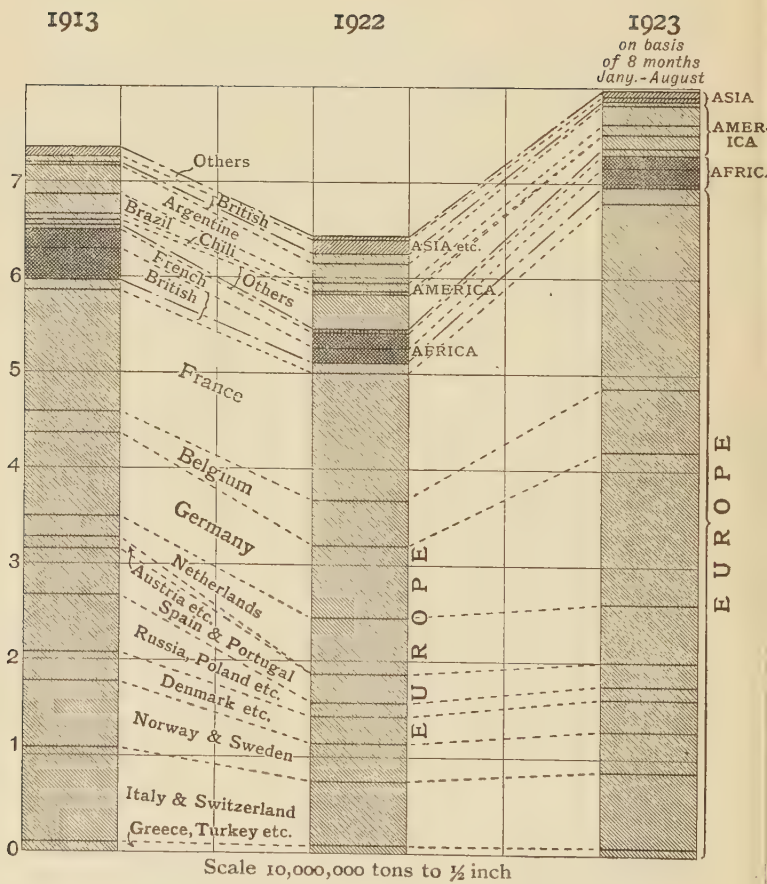


DIAGRAM No. 5.

shipowners have succeeded is indicated in Diagram No. 5, which shows the annual shipments to various markets in 1913, 1922, and 1923 on the basis of the first eight months of that year.

The figures from which the diagram is drawn are given in Appendix I. and in greater detail in Appendix II.

In order to make this diagram complete, a corresponding diagram is required to show the consumption and source of supply of coal in the foreign countries; therefore the following comments are subject to amendment:

1. The exports of first eight months of 1923 are at a rate higher than ever before.
2. It is obvious that the European market is by far the largest, and Great Britain is the largest exporter of coal in Europe.
3. It should be noted that the ultimate destination of coal exported to the Netherlands is partly Germany and Switzerland by way of the Rhine.

In 1923 France, Belgium, Germany, and Netherlands imported $25\frac{1}{2}$ million tons of our coal; in 1922 the same countries imported $31\frac{1}{2}$ millions, and in 1923 at the rate of $47\frac{1}{2}$ millions for the first eight months.

Excess 1923 over 1922	.	.	.	16 millions.
„ 1922 „ 1913	.	.	.	6 „
„ 1923 „ 1913	.	.	.	22 „

It is probably true that the whole of the excess 1923 over 1922 would have been produced in Germany had it not been for the occupation of the Ruhr by the French, and consequently the exports 1923 are quite abnormal.

The sudden increase of demand for coal in the early part of 1923 caused a sharp increase in price, which was very welcome to the coal industry but highly detrimental to the iron and steel and other industries.

4. The other countries of Europe are taking much less coal from us than they did in 1913; the figures are:

1913	.	.	.	34 $\frac{1}{2}$	million tons.
1922	.	.	.	19 $\frac{1}{2}$	„ „
1923	.	.	.	22	„ „

The improvement in 1923 is chiefly due to Italy, which normally imports coal by rail from the Ruhr, but American coal is now regularly imported into Italy and is to some extent displacing British coal. The only country which is taking normal supply is Denmark.

Austria is taking practically no coal from us instead of about a million tons per year, and of course the Russian market has fallen away from 6 millions in 1913 to about 1 million.

5. Exports to Africa are satisfactory as regards the French possessions in that continent, but Egypt is not taking much more than one-half of 1913 quantity.

The South American market is not yet satisfactory. British coal is being displaced by coal from U.S.A., Australia, and Natal, and had it not been for the coal strike in U.S.A., our exports to the continent of America would have been less than they were.

In 1922 India took abnormal quantities, but British coal in Asia is being displaced by coal from Natal and China.

Oil

Oil has become a keen competitor for bunker business, and the quantity of bunker coal used has been reduced thereby. A precise figure for such reduced quantity is not available.

The higher calorific power of oil compared with coal per unit of bulk and the saving in labour for trimming bunkers and firing the boilers induce shipowners to convert their vessels from coal-burning to oil-burning types, but of course at a lower price coal would still be the cheapest, and storage of coal is easier than of oil, so that future developments in this direction depend upon the relative prices of coal and oil.

Water Power

The harnessing of water power, especially in Norway and Sweden, has somewhat reduced the demand for coal in these countries in the meantime, but the chief cause for the reduced demand in Scandinavia is the world-wide fall in the consumption of iron and steel.

Russia

Industry in Russia collapsed and its population was more or less starving, consequently the exports of coal to that country practically ceased, but now there are some indications of revival.

To what extent famine and disease have reduced the population of that country is not known, but sooner or later Russia will be reorganised and the vast wealth of her natural resources will be available, first, for the benefit of her own people, and second, for the whole industrial world. It should be noted that the recovery of Russia will vastly improve the industrial position of Germany, whose capacity for industrial production has been increased since 1913, and the vast market that will be provided by development of Russian resources should enable Germany to bear with ease a burden of reparations far in excess of the amount we are paying to America.

Iron Ore

It is necessary to review the iron ore production of the country as well as the coal position.

The facts are as follows :

AVERAGE MONTHLY OUTPUT AND VALUE OF HOME IRON ORE
AND ITS CONTENTS OF IRON

	Iron.	1913.		1922.		First Quarter 1923.	
	per cent.		s. d.		s. d.		s. d.
<i>Jurassic—</i>							
Cleveland (mined) .	29	495,000	5 1	97,100	8 6	158,000	7 6
Lincoln, Northampton, etc. (mostly quarried)	26	534,000	2 1½	373,000	3 1½	540,347	2 9½
Coal measure iron- stone (mined) .	30	124,800	8 7½	22,700	12 5	43,000	12 0
Hematite (mined) .	52	147,300	21 6	69,900	22 0	109,220	21 11

As regards Cleveland ironstone, which is mined from considerable depth, it will be noted that the output is only about a quarter of what it was in 1913, and at 7s. 6d. per ton its value per unit of iron is 3.1 pence ; while imported ore containing 50 per cent iron cost in the same period in the neighbourhood of 25s., or 6d. per unit of iron.

The direct effect of the Seven Hours Act increases the cost of mining the ore, and the indirect effect, by increasing the cost of coal, again reacts against the production of this ore, because much less fuel is required to smelt the imported ore. The cumulative effect of the Seven Hours Act, together with the higher rate of wages, accounts for the decline in production of Cleveland ore, with the result that about 12,000 fewer men are employed in the Cleveland mines now than were employed in 1913, while the comparative prices of hematite made in the Cleveland district from imported ores and No. 3 Cleveland pig-iron are as follows :

		Hematite.			Cleveland No. 3.	
1913 average	.	£3	13 10	100	£2	18 10 78
March 1923 .	.	5	15 0	155	6 0 0	162

That is to say, Cleveland pig-iron, which so many British ironfounders use for making all sorts of cast-iron goods, is more than double the 1913 price, while hematite made from foreign ores is only 55 per cent higher in price ; and little or no profit is being made by the ironmasters now, while in 1913 fair profits were being earned.

The coal measure ironstones, for the same reasons, are even more seriously affected, and in fact are only being worked when they are found in conjunction with coal, so that they have to be handled while working the coal, whether they are put out or not.

The hematite ore mines of the north-west coast were greatly disorganised during the latter part of the War and by the Seven Hours Act, and many of them had to close down.

On the other hand, it is fortunate that our vast resources in the lean iron ore of Lincolnshire, Northamptonshire, etc., which are shallow and mostly quarried, and consequently

free from the affliction of the Seven Hours Act, are being worked up to the average production of 1913, because at 2s. 9½d. per ton the cost per unit of iron is only 1.30, which enables them to bear more easily the burden of high-priced fuel and high railway rates.

The capacity for output from these deposits was greatly increased during the War, so that the production is still below the maximum possible without further capital expenditure.

Iron and Steel

It is also true that the capacity for output of our iron and steel works was greatly increased during the War, and much plant was remodelled and fitted with labour-saving machinery.

The table on following page is in parallel with the diagram for coal production and consumption, and while it may be out of place here, it is included because the coal, iron, and steel industries are so closely allied.

It shows the production, imports, exports, and home consumption of pig-iron and the corresponding figures for steel, expressed on a uniform basis as ingot steel, and also the production and consumption of both per head of population.

As regards pig-iron, both production and consumption per head of population are low and unsatisfactory, but 1923 is much better than 1922, which is encouraging.

As regards steel, the position is more satisfactory. It will be noticed that ingot production per head of population is higher than in 1913, but still at least 25 per cent below the capacity of the works. The fact that less pig-iron is now being used per ton of ingots made is due to the increased use of scrap, largely derived from discarded munitions of war and ships. How long this increased supply of scrap will last remains to be seen. Exports of steel as well as coal are higher than ever before, and probably for the same temporary reason, *i.e.* cessation of deliveries from the Ruhr.

Abnormal quantities of coal are going to Germany and

PRODUCTION AND CONSUMPTION OF IRON AND STEEL
IN 1903, 1913, 1922, AND 1923 (IN 1000 TONS)

	1903.	1913.	1922.	1923. On Eight Months' Basis.
PIG-IRON :				
Production	8,935	10,260	4,902	7,589
Imports	130	185	164	132
Total	9,065	10,445	5,066	7,721
Exports	1,065	1,124	794	785
Home consumption . .	8,000	9,321	4,272	6,936
STEEL :				
(1) Ingot production . .	5,034	7,664	5,880	8,532
(2) Imports—				
Actual incl. scrap . .	1,190	2,174	821	1,386
(3) Ingot basis	1,586	2,536	958	1,617
(1) + (3)	6,620	10,200	6,838	10,149
Exports—Actual	2,499	3,845	2,607	4,270
„ Ingot basis	3,332	5,127	3,476	5,693
Home consumption—				
Ingot basis	3,288	5,073	3,362	4,456
Population, United Kingdom	40,245	46,032	47,506	47,700
Pig-iron—				
Production per head, cwts.	4.4	4.5	2.1	3.2
Consumption „ „	4.0	4.1	1.8	2.9
Steel ingot—				
Production per head, cwts.	2.5	3.3	2.5	3.6
Consumption „ „	1.6	2.2	1.4	1.85

being paid for promptly in British currency, but the competition for steel export orders from Germany is more or less dormant, although stocks are said to be accumulating on the Rhine, which may flood the world's market at any price.

If lower steel prices were possible, the improvement in the steel export trade which was visible at the end of 1922 but checked by rise in price in 1923, would probably develop, and if the shipbuilding industry, which is the largest consumer of steel at home, were free from industrial strife, the demand might attain such proportions as would allow the

steel works to be run up to their full capacity, and the additional output would absorb something like one half of the abnormal exports of coal to Germany, France, and Belgium.

It is therefore clear as regards the iron and steel industries, that although there are indications of improvement many men and much capital are unemployed in this country, and it is notorious that the owners cannot make profits under present conditions and prices of iron and steel products in the world's markets.

It is true that the prices of coal, iron, and steel are governed by the world's market, and it may fairly be asked : What is the reason that our competitors, who pay the world's price for coal, can beat us in competition for orders for iron and steel ?

The answer to this question is difficult and the causes are confusing.

The argument of inferior technical equipment in this country has largely been washed out by the great improvements made during and after the War, and most of the iron and steel works now working are up to date in equipment.

Rates of exchange and currency factors generally assist export of iron and steel from some competing countries, but it is generally supposed that such countries suffer from high cost of living, and therefore wages must to some extent be proportionately higher, which more or less balances the rate of exchange.

It will be found on close analysis that wages direct and indirect (*i.e.* wages paid in coal mines and railways, etc.) represent about 75 per cent of price of steel in normal times.

General Questions

We therefore must come back to the basic questions—

- (1) Do the foreign workmen work more for the same or a smaller real wage ?
- (2) Are our French and German competitors paying the world's price for coal or are they subsidised in some way ?

If the answer to the first question be in the affirmative, we have got to face it, and readjust our own wages, before we can free ourselves from unemployment. We are endeavouring to establish a higher standard of living for the British workmen than for their continental competitors.

We must inevitably accept a reduced standard of living unless we produce a good deal more per head of population than we are doing at present, but that production must be at a price that will enable us to sell our goods in the markets of the world, whether these goods are coal, iron, steel, or anything else. We have got to buy our food abroad.

If the answer to the second question be in the negative, and it is a fact that by juggling with reparation coal the French are subsidising their iron and steel works, or the Germans are doing the same by uneconomic rates on the Government railways or otherwise, we must take some steps to correct the abuse of such uneconomic competition.

Our production of coal per head of population could at once be increased by repeal of the Seven Hours Act. If the world's market could absorb the increase at the current prices, a substantial advance of wages would automatically accrue to the miners by the working of the present wages agreement, as costs of production would fall, which has the same effect on wages as a rise in prices.

If, on the other hand, the increased output could not be absorbed at the current prices, a rapid fall in price would take place without reduction of wages below the guaranteed standard, which would stimulate the home demand by increased consumption in the iron and steel trade and other industries, widen the foreign market, and possibly so increase the demand as to make it possible to develop further our natural resources of coal and low grade ironstone.

The combined effect of all these factors would do much to reduce unemployment.

It is a profound mistake to regard the repeal of the Seven Hours Act as something internal to the coal industry itself.

Public opinion rightly or wrongly acquiesced in the reduction of hours, and it is a distinct benefit to the miner

to get more or as much money for less work, if he can get work at all.

The employers in the coal industry who are not directly interested in other industries prefer to leave things as they are, and certainly it would be impossible for the Mining Association, which represents all owners, to adopt a policy having the object of the repeal of the Seven Hours Act against the will of the miners and against public opinion.

Most of the employers in the coal industry quite realise the effect of high prices of coal on other industries and readily explain their views, but when purely financial results in the industry itself are considered it is generally recognised that so long as the application of this Act or any other which increases cost of production is uniformly applied over the whole country, profits of the industry are not seriously affected either way although expansion of output is not possible ; and it is true of any business that the higher the price the greater is the turn-over in the business and the more chance there is of some profit.

For these reasons, if the reduction in cost of production of coal that would result from the repeal of this Act is necessary, the demand must come from the general public as represented by Parliament, and the fact that the repeal of this Act would probably be followed by the working of longer hours by many small groups of other industries, especially in the distributive trades, must not be lost sight of as a prime factor in the reduction of the cost of living.

In any event, in order to maintain the standard of living, now being paid for out of capital, by economic and permanent means, increase of production per head of population is absolutely necessary, and each and every industry must pull its weight.

In order that it may be clearly understood what the effects of the present conditions are on the price of coal the following facts should be noted.

At the rates of wages current in the collieries in 1914, and under the conditions of working then prevailing, the lowest average price per ton of coal raised would be round

about 9s., and this was about the average price for five years before the War.

At the rate of wages now guaranteed as the lowest by the 1921 Agreement, *i.e.* 20 per cent above 1914 rates, and under the conditions of working now prevailing, the lowest price possible is round about 17s.¹

If, therefore, the cost for fuel in any industry on the average of five years pre-War be represented by 100, the lowest price in the future may fairly be taken to be 190, with some correction for railway carriage dependent upon locality.

The repeal of the Seven Hours Act, if acquiesced in by the miners, would reduce this index figure from 190 to about 165, with wages still 20 per cent above 1914 rates, and allowance for overtime and other concessions in working conditions granted during and after the War still maintained. These concessions cost a good deal, and the balance of difference is made up of the increased price of sundry materials and of local rates and taxes, insurance, etc. etc.

If the other industries can carry on and expand at the level of prices indicated by the number 190 as compared with 100 for the five pre-War years, and the demand for coal expands in consequence, the chief necessity will be more housing accommodation in the colliery districts to enable more men to be employed, and further development of the coal areas which are available; but if the demand is there supply will follow as surely in the future as it did in the past; meantime the abnormal exports due to the reduction of German output, amounting to at least 16 million tons, which is about 25 per cent of our 1922 consumption in the general industries, as indicated on Diagram No. 4, are available and provide for the full quantity consumed for these purposes in 1913.

If the country can carry on under present conditions with expanding trade nobody will be better pleased than the employers and employees in the coal industry, and other

¹ The higher wage guaranteed in April 1924 will materially increase this figure of 17s. and the deductions following based upon it.

industries need not fear that their demands for coal will not be met.

In 1903, 2.04 per cent of the population were employed in and about the collieries of this country; in 1913 the number so employed rose to 2.5 per cent and fell in 1922 to 2.31 per cent. If the same percentage of the population can be employed in 1924 as was employed in 1913, which would mean 1,200,000 persons, and the number was not very far short of that in October 1923 (1,173,600), and the collieries kept working approximately full time, the output of 1924 would equal or exceed that of 1913, but in order that production of coal per head of population should equal 1913 the output must slightly exceed 300 million tons, instead of 287 million tons in 1913.

Provided the demand were strong enough at the present level of prices and there was as much assurance now as there was before the War that the demand would continue with reasonable regularity, that output could and would be attained in a few years, always provided that industrial peace as well as international peace is maintained; the former is controlled by the people of this country, so that the fault lies at home if industrial strife breaks out again.

It is probably true that the prime factor of abnormal unemployment in 1922 was the coal strike of 1921 and other industrial discord, for the reason that employers in all industries will carry on a going works in face of many difficulties and some loss; but when that works is stopped by some reason outside their control, the difficulties of restarting it may be so great that remaining idle is the lesser of two evils. This was the case under the conditions of trade prevailing in 1921-22, at the time of the coal strike.

APPENDIX I

ABSTRACT OF COAL EXPORTED DURING THE YEARS
1913, 1922, AND 1923

	1913.	1922.	1923. On Basis of Eight Months to August 1923.
AFRICA			
French	1,706,548	1,403,533	1,549,758
British	3,374,020	1,860,550	1,802,533
Others	273,153	228,765	307,731
Total	5,353,721	3,492,848	3,660,022
AMERICA AND WEST INDIES			
British	173,361	1,029,207	576,087
Argentine	3,693,572	2,021,092	2,524,770
Brazil	1,886,871	1,013,221	1,162,563
Chile	588,526	84,311	12,698
Uruguay	723,936	502,533	460,951
Total	7,133,323	7,843,971	5,846,590
ASIA			
British	695,992	1,459,344	388,860
Others	195,786	102,914	83,858
Total	891,778	1,562,258	472,718
AUSTRALASIA AND EAST INDIES			
Total	63,776	127,564	91,113
EUROPE			
British	1,222,675	1,064,460	2,022,066
French	12,775,909	13,579,417	19,155,486
Belgium	2,031,077	3,489,419	6,653,917
Germany	8,952,328	8,345,606	15,711,591
Netherlands	2,018,401	6,067,789	6,093,845
Austria, etc.	1,056,634	3,373	15,720
Spain and Portugal, etc.	5,004,841	3,115,414	2,764,770
Russia, Poland, etc.	5,998,434	1,271,456	1,053,927
Denmark, Iceland	3,138,910	2,941,564	3,069,916
Norway and Sweden	6,861,421	4,089,789	4,549,478
Italy and Switzerland	9,647,161	6,461,255	7,815,074
Greece, Turkey, etc.	1,249,729	742,201	758,586
Total	59,957,520	51,171,743	69,664,376
Total, all countries of the world	73,400,118	64,198,384	79,734,819

APPENDIX II

COAL EXPORTED TO FOREIGN COUNTRIES AND BRITISH POSSESSIONS
DURING THE YEARS OF 1913 AND 1922 AND EIGHT MONTHS
ENDED AUGUST 1923

Destination.	Tonnages shipped from United Kingdom.		
	Year 1913.	Year 1922.	Eight Months to August 1923.
AFRICA			
Algeria	1,281,664	1,032,282	744,856
Anglo-Egyptian Sudan . .	Nil	18,726	1,006
Belgian Congo	Nil	2,500	11,412
Bourbon. (Reunion) . . .	7,407	Nil	Nil
Cape of Good Hope . . .	65,177	28,187	9,302
East Africa Protectorate .	1,826	Nil	Nil
Egypt	2,162,477	1,743,643	1,116,888
French Somaliland	55,220	20,815	21,445
French West Africa . . .	149,107	119,327	104,242
(a) German East Africa . .	3,924	Nil	Nil
(c) German West Africa . .	8,436	Nil	Nil
Gold Coast	6,609	9,004	9,485
Italian East Africa	5,301	2,304	Nil
(b) Kenya Colony	Nil	3,224	39
Madagascar	19,140	36,430	13,545
Mauritius and Depend- encies	39,872	21,639	28,016
Morocco	8,956	34,002	25,393
Natal	Nil	Nil	2,902
Nigeria	59,304	9,926	7,716
Orange Free State	25	Nil	Nil
Portuguese East Africa . .	117	Nil	Nil
Portuguese West Africa . .	233,015	193,667	166,272
St. Helena	4,737	900	Nil

(a) Included as Kenya Colony in 1922.

(b) Included as German East Africa in 1913.

(c) Now South-West Africa.

APPENDIX II (*continued*)

Destination.	Tonnages shipped from United Kingdom.		
	Year 1913.	Year 1922.	Eight Months to August 1923.
AFRICA (<i>continued</i>)			
Seychelles Island . . .	Nil	1,754	600
Sierra Leone	40,602	34,305	35,820
South-West Africa Protectorate	Nil	Nil	6,075
Spanish Ports in North Africa	4,816	18,011	10,708
Spanish West Africa . .	25	Nil	Nil
Tunis	192,461	160,677	123,691
West Africa Gambia . .	Nil	92	2
Zanzibar and Pemba . .	3,503	1,433	600
Total	5,353,721	3,492,848	2,440,015
AMERICA AND WEST INDIES			
Argentine Republic . .	3,693,572	2,021,092	1,683,180
Bahamas	Nil	1,748	Nil
Bermudas	8,939	10,159	7,821
Bolivia	2,171	990	813
Brazil	1,886,871	1,013,221	775,042
British Guiana	15,121	8,581	7,591
British Honduras . . .	2,586	260	225
British West India Islands	24,719	59,383	31,454
Canada	37,827	830,934	271,315
Chile	588,526	84,311	8,465
Colombia	354	1,227	454
Costa Rica	Nil	2,802	Nil
Cuba	11,879	16,323	5,576
Danish West Indies . .	23	Nil	Nil
Dutch Guiana	1,555	2,233	510
Dutch West Indies . .	Nil	3,309	28
Ecuador	Nil	1	Nil
Falkland Islands . . .	27,977	35,736	33,148
French West Indies . .	709	28,067	23,286
Guatemala	5	Nil	Nil
Hawaii	Nil	11,796	7,675
Mexico	20,106	30	145
Newfoundland and Coast of Labrador	56,192	82,406	32,504
Panama	104	Nil	Nil
Paraguay	26	Nil	5
Peru	16,819	21,481	14,501

APPENDIX II (*continued*)

Destination.	Tonnages shipped from United Kingdom.		
	Year 1913.	Year 1922.	Eight Months to August 1923.
AMERICA AND WEST INDIES (<i>continued</i>)			
St. Domingo	1,584	4,094	1,361
St. Pierre and Miguelon . .	162	Nil	274
San Salvador	29	Nil	Nil
United States of America . .	6,250	2,100,403	672,721
Uruguay	723,936	502,533	307,301
Venezuela	1,188	851	440
Virgin Islands of the United States	Nil	Nil	11,892
Whale Fisheries, Northern . .	1,512	Nil	Nil
Whale Fisheries, Southern . .	2,581	Nil	Nil
Total	7,133,323	7,843,971	3,897,727
ASIA			
Aden and Dependencies . . .	181,204	92,964	46,082
Ceylon and Dependencies . . .	239,657	232,675	117,166
China (excluding Hong Kong, Macao, Leased Territories)	26,072	2,676	2,000
Cyprus	350	Nil	231
Federated Malay States . . .	1,251	Nil	Nil
French Indo-China	Nil	5,438	2,502
Hong-Kong	52,408	33,762	10,224
India	179,192	999,159	63,672
Iraq	Nil	Nil	4,596
Japan	3,652	Nil	Nil
Mesopotamia	Nil	6,670	Nil
Oman (Arabia)	Nil	302	1,005
Palestine	Nil	19,484	4,838
Persia	1,670	10,850	4,169
Portuguese possessions in India	Nil	24,227	8,138
Siam	4,316	4,407	4,610
Smyrna	Nil	25,660	Nil
Straits Settlements and Dependencies	29,914	74,630	8,774
Syria	Nil	17,692	15,076
Tripoli	3,607	8,160	3,342
Turkey	156,469	3,502	15,063
Wei-hai-wei	12,016	Nil	3,657
Total	891,778	1,562,258	515,145

APPENDIX II (*continued*)

Destination.	Tonnages shipped from United Kingdom.		
	Year 1913.	Year 1922.	Eight Months to August 1923.
AUSTRALASIA AND EAST INDIES			
Dutch Borneo	5,009	Nil	Nil
Fiji Islands	Nil	Nil	300
French Possessions in Pacific	2,000	Nil	Nil
Java	34,371	28,603	6,008
Nauru and British Samoa	Nil	2,395	Nil
New Zealand	4,958	50,178	1
South Australia	Nil	228	21,196
Tasmania	Nil	Nil	5
Victoria	Nil	Nil	19,703
Western Australia	Nil	9,198	1,519
Other Dutch Possessions in the Indian Seas	17,438	34,935	11,810
Islands not particularly designated	Nil	2,027	Nil
Other Islands in the Pacific (British)	Nil	Nil	200
Total	63,776	127,564	60,742
EUROPE (including Azores, Madeira, and Canary Islands)			
Austria	Nil	3,373	Nil
Austria Hungary	1,056,634	Nil	Nil
Azores	22,608	36,620	14,339
Belgium	2,031,077	3,489,419	4,435,945
Bulgaria	56,585	558	1,314
Canary Islands	1,114,629	524,815	445,513
Channel Islands	167,862	160,636	102,910
Denmark (including Faroe Island)	2,034,240	2,866,233	2,000,119
(d) Esthonia	Nil	110,980	64,841
(d) Finland	Nil	212,201	244,434
Fiume	Nil	Nil	10,480
France	12,775,909	13,579,417	12,770,324
Germany	8,952,328	8,345,606	10,474,394
Gibraltar	354,702	689,428	312,084
Greece	727,899	428,647	318,595
Crete	Nil	255	Nil

(d) Included as Russia in 1913.

APPENDIX II (*continued*)

Destination.	Tonnages shipped from United Kingdom.		
	Year 1913.	Year 1922.	Eight Months to August 1923.
EUROPE (including Azores, Madeira, and Canary Islands) (<i>continued</i>)			
Iceland and Greenland	104,670	75,331	46,492
Irish Free State	Nil	Nil	723,374
Italy	9,647,161	6,341,743	5,105,057
(<i>d</i>) Latvia	Nil	184,503	110,538
(<i>d</i>) Lithuania	Nil	105,779	50,694
Madeira	131,751	58,602	31,388
Malta and Gozo	700,111	214,396	209,676
Netherlands	2,018,401	6,067,789	4,062,563
Norway	2,298,345	1,566,969	1,052,493
(<i>d</i>) Poland (including Dantzig).	Nil	73,924	23,337
Portugal	1,201,722	784,356	551,074
Roumania	251,925	25,695	15,306
(<i>e</i>) Russia	5,998,434	584,069	208,774
Serb-Croate—Slovene State	Nil	47,621	18,097
Spain	2,534,131	1,711,021	800,866
Sweden	4,563,076	2,522,820	1,980,492
Switzerland	Nil	119,512	104,992
Turkey	213,320	239,425	152,412
Total	59,957,520	51,171,743	46,442,917
Total, all Countries of the World	73,400,118	64,198,384	53,156,546

(*d*) Included as Russia in 1913.

(*e*) For 1922 the figures of Esthonia, Finland, Latvia, Lithuania, and Poland should be added.

IRON AND STEEL TRADE PROSPECTS

HAROLD JEANS

UP to 1914 the British Iron and Steel Trades possessed statistical records for all important producing, exporting, and importing countries which enabled them to make a fairly accurate survey of past years, and to foresee, within certain limits, the possibilities of the immediate future. To-day political and financial chaos exists in many of our markets, and recent records are so influenced by these extraordinary and special conditions as to be almost valueless for comparison. Before the War we possessed a skilled population and resources capable of producing a much larger quantity of iron and steel products than we could consume. That was in times such as the first half of 1913, when our steel ingot output was rather under a rate of 8 million tons per annum. Now we are credited with a capacity of 12 million tons, or 50 per cent increase. The United States has also increased its production from 31 million tons to 45 million, or a very similar percentage. As regards other European countries, alterations in the national frontiers make comparisons misleading, but even allowing for war destruction not yet made good, it is common knowledge that the capacity has increased considerably. In addition, we have important additions to plants in Canada, Australia, Japan, Italy, Spain, India, and China. These could not all be utilised at once. Considerations of supplies of raw material and their cost, as well as the provision of a skilled personnel, would delay their operation; but given settled political and financial

conditions, practically the whole would be capable of being put to work within a short time.

How are we to market our 12 million tons? Before the War we imported about 2 million tons of iron and steel products a year. We are importing (taking the most recent figures) at the rate of $1\frac{1}{2}$ million tons this year, as against under 1 million tons last year. The increase of British capacity—primarily the result of war needs—was expected partly to free us of the necessity—either on the grounds of price or unsuitability of the home product—of importing steel, but has failed so far to do so. The problem therefore is not the home consumption and export of 12 million tons of steel ingots, but of say 14 million tons expressed in terms of ingots. It may here be explained that while it is convenient to express statistics in terms of pig-iron, or in terms of steel ingots, the wastages in manufacture are great, and the quantities of finished products to be dealt with are very materially less.

It may be taken that the quantity of pig-iron and steel left over for actual home consumption in this country before the War was in the neighbourhood of about half the tonnage we have now to dispose of. So many factors, such as the extent of manufacturers' stocks, enter into a calculation of this character that figures can only be approximate. They are sufficiently accurate, however, to enable us to say that the annual home consumption of iron and steel increased very slowly before the War, and in a quarter of a century had not doubled. This slow increase of the quantity of iron and steel used at home does not give much hope of rapid growth in the future. The habits and methods of people change. The steel-frame building and steel wagon have done much for home consumption in the United States, but dealing with facts as they are we must recognise that very little help towards increased consumption can be expected from our home market. Another million tons, more or less, of home consumption will not do much towards enabling us to utilise the large increase of capacity. Of course a good deal of iron and steel goes abroad directly in the form of

finished machinery, railway wagons, etc. In the first four months of 1923 these exports were at the rate of something under a million tons per annum, and in good years these figures would be increased. In addition, there are so many directions in which iron is used in other industries that there are unrecorded exports, but of small individual tonnage.

We have therefore to turn to the export trade to find a market for our surplus capacity. It is largely by the rise or fall of that branch of the iron and steel trade that the future position of Great Britain must be determined. Now the export trade resolves itself almost entirely into a question of price. Much of course must be said for good sales organisation abroad, particularly in securing the refusal of orders at the parity of world values. With certain exceptions, such as material used where the safety of life or limb is contingent, there is practically no premium to be obtained to-day for the qualities of steel in which Great Britain specialises. Rails, joists, plates, angles, merchant iron, and steel are sold almost entirely on price, and buyers have no difficulty in finding out the names of likely suppliers in each country, who in the export trade are pitted one against the other ; and as regards the principal markets of the world it may be said that the buyers know all that a buyer need know about iron and steel.

This will be regarded as a statement of the obvious, but it cannot be too strongly emphasised that whereas, in the machinery trade, design and workmanship count for much, and in textiles there are many qualities in which British manufacturers excel, in iron and steel the openings in the export trade are for a cheap producer. However, Great Britain has not for many years been a cheap producer, and whether or not we can hope to regain that position is really the crux of the situation. We must have cheap raw materials, and labour with reasonable wages and hours of work. In many respects we should be the most favoured nation in the world for carrying on a foreign trade, for we have a wealth of port and harbour facilities and short hauls, which advantages have unfortunately

been neutralised by artificial conditions and labour legislation conceived by theorists. But it would be a mistake to assume that the resources of Great Britain from an iron-making point of view are in any way remarkable. There is a distinct shortage of coals suitable for making coke of the requisite quality, and while our home resources of ore are very great this ore is of low grade. The cheapest of our ironstone in Cleveland and Northamptonshire has already been won; and while in Oxfordshire we have a field which almost compares with the Meurthe and Moselle, it is of low grade and remote from coking-coal collieries, and the railway rates to centres of consumption are very high.

A great deal of capital has gone into the iron and steel trade during the War, and, generally speaking, the plants are much better equipped than ever before. A good deal of the capital was, however, spent when prices were very high, although grants by the Ministry of Munitions may have considerably reduced the book cost. Still, it is quite clear that the existing works could not be duplicated at the present time for much less than double their original cost, so that in this respect the existing firms are in an advantageous position. But the same remark is true of our foreign competitors, and unless the capacity can be brought into profitable operation it is a millstone round the necks of the firms possessing it.

The suggestion frequently made that British firms do not make the most of their opportunities in the export trade is not, generally speaking, a true one. Can we, however, replace individual by collective effort?

There have been many suggestions as regards a working arrangement between different manufacturers, not only as regards the home but as regards the export trade, and the statement is frequently made that the British manufacturer does not work with his fellows so readily as does the German or American. The present and former insularity in politics is, it is claimed, carried into business.

It is true that combines in this country have not had the permanence or power of those which have been organised abroad. This is mainly due to the Customs

tariffs, which our chief competitors enjoy. In the iron trade we have, it is true, no such powerful combinations as formerly existed in Germany, but most iron and steel products are represented by Associations. Of recent years the disposition to regulate competition has become more marked. The merchant or consumer is apt to take full advantage of a weak market, and prices are quickly forced down to an unremunerative level ; a small decrease in consumption then means a far from proportionate drop in price. Hundreds of thousands of tons of iron and steel have thus been given away so far as the maker's profit is concerned, and yet the maker is clearly entitled to a fair profit, both in periods of increasing and decreasing demand. The consumer can make just as much use of a ton of rails or a bundle of galvanised sheets when times are good as when times are bad.

As regards the home trade, the view is that full control of the market would mean the elimination of speculation by merchants, who foreseeing a rise buy largely, and afterwards undersell the manufacturer. An individual manufacturer can hardly refuse such orders, although he well knows the market is a rising one, but the necessity of keeping his works going, and the knowledge that another manufacturer would take the order if he did not, practically force him to accept such speculative orders. As regards the foreign trade, it is thought probable that agents located in the various buying centres abroad would be able to bring more prominently to the attention of buyers the advantages of dealing with British firms. No doubt there is something in this, particularly if stocks of certain classes of standard materials were held abroad, but the expense would be great, and in some cases would no doubt result in loss because, as already stated, as a rule buyers are pretty well informed as to the trend of the market. A very much larger proportion of the buying for foreign trade is done through British merchant firms than is represented by the actual British proportion of tonnage sold abroad. These merchant firms would, it may be taken, give the preference to the British manufacturer, other things being equal, but

here again it comes down to a question of price. Careful consideration is necessary before any step is taken which would prejudice the position of these merchant firms, particularly those with a vast organisation abroad and large capital.

Judge Gary, of the United States Steel Corporation, some fifteen years ago, proposed an international division of the world's exchange of iron and steel, and such an arrangement is the only one under which higher prices, and in periods of bad trade reasonable prices, could be secured. It is difficult to visualise British producers securing an allotment of something like seven million tons per annum, which is really what is needed. The matter has been dealt with here, as combination in export sales is a remedy which has been and is being suggested for the present position.

While the writer is in entire sympathy with those who have advocated the development of trade within the Empire, it is not at all certain that this is a policy which is likely to provide us with rapidly expanding markets for iron and steel. Railways, especially in new countries, whose products are mainly agricultural, provide the bulk of the demand for iron and steel. The mileage of railways open for traffic in the Empire increased from 77,500 miles in 1905 to 107,000 miles in 1914, an increase of nearly 40 per cent in ten years, but of the 30,000 miles' increase, 24,000 is due to Canada, India, and the Commonwealth of Australia, who are now in a position to supply the rails and a considerable part of the equipment. The additions elsewhere only amount to 600 miles a year. In the years 1914-1919 another 21,000 miles of track was added, but two-thirds of this was again due to the three countries named.

Of course the railway demand is not everything. There are many other descriptions of iron and steel that are called for, as, for instance, galvanised sheets for roofing, wire for fencing, and tin-plates for food-packing.

In tin-plates and galvanised sheets for export Great Britain still has an easy lead, lately securing large orders in

many markets which were lost during the War, and even in Canada, which had been lost some years previously. At the same time we have to face a large and growing output of pig-iron and steel within the Empire, as the following figures will indicate, which show the maximum post-War output of the four countries named. The figures for all countries but Canada are those for 1921, a year of great depression. The Canadian figures are for 1920, when much of the plant in other parts of the Empire had not yet become operative.

	Pig-iron.	Steel.
Canada . . .	999,000 tons	1,110,000 tons.
Australia . . .	352,000 „	209,000 „
India . . .	371,000 „	182,000 „
South Africa .	1,000 „	22,000 „
	<hr/> 1,723,000 tons	<hr/> 1,523,000 tons.

There is no doubt that given good trade these outputs would be enormously exceeded. In India, for instance, the capacity for making pig-iron to-day cannot be far from one million tons per annum, while Canada has made nearly 1,700,000 tons of steel ingots and castings in one year (1918). South Africa has only just made a start, and works only exist on a small scale, but large plant is projected, particularly for sheets and wire.

Our overseas trade naturally divides itself into exports to foreign countries and exports to British possessions. The trade with foreign countries may further be divided into material sent to the principal European protected markets, and material sent to the other countries of the world, such as South and Central America, China, and Japan. The British Empire takes roughly 40 per cent of the total, and has taken about this figure for many years.

In trade with the British Empire we hold a premier position, but these markets have not shown such a rapid expansion as would enable us to hope that they are capable of taking large additional quantities of iron and steel in the near future. In fact, the reverse is the case. In the ten years 1904-1913 our exports to British possessions increased from 1,350,000 tons to a maximum of 2,370,000 tons in

1913, but the quantities vary a good deal, and the 1913 figure is far too high as an average for pre-War times.

Moreover, these figures relate to the period before the desire of these countries to render themselves independent so far as possible of imported iron and steel by the fostering of home industry had, except in the case of Canada, been translated into action. A stream of emigration is being directed to Canada and Australia, but from the point of view of purchasing power for British iron and steel an emigrant is worth little to us, particularly in Canada. There the natural advantages of the United States are overwhelming, except on the Pacific Coast. It is true that in 1922 we recaptured the Canadian tin-plate market, and in other descriptions show a notable advance, particularly in sheets, but it is altogether a matter of price as to whether or to what extent we shall retain it.

Our exports to India are not very progressive. The quantity despatched from Great Britain would average about 550,000 tons a year in the decade 1900-1910. The average of the two pre-War years was 750,000 tons. In 1920 it was 660,000 tons. In the meantime India has become a large producer, and is contemplating heavy import duties, and a great expansion in the demand is necessary if our trade figures are to be maintained, let alone increased.

The same remarks apply to Australasia, a most progressive market before the War, and taking an average of 700,000 tons in the two pre-War years. One important point in our favour must not be lost sight of in considering the home output of iron and steel in these countries. They are continents in themselves, and the distances the Tata Works in India, or the Broken Hill Works in Australia, have to transport their products to the more remote parts of their own market very much reduces any advantage they may possess. The same applies to the projected plant in South Africa. In fact the permanent financial success of steel companies in these countries, unless heavily subsidised by bounties or import duties, has yet to be proved. No one could help making large profits during the War, and

in India it is generally conceded that the money has so far been made in pig-iron rather than in steel.

The position in Europe is indeed obscure. Assuming the birth of a new Europe comparatively tranquil as in 1914, and with currencies stabilised, we still have unknown factors introduced by the rearrangement of national frontiers. This much may be said. Before the War we were holding our own in the British Empire, but we could not claim a similar success on the continent of Europe. The German exports of iron and steel to near-by European countries increased in a remarkable manner, although thirty years ago we had by far the largest share of these markets. The reason was, however, not far to seek. Just as the United States has great advantages over us in dealing with Canada, so had Germany in her exports to those countries whose borders march with her own. In fact, out of a total German export of 6,300,000 tons in 1913, nearly 70 per cent was with European countries, including Great Britain. The European trade showed enormous growth in spite of the efforts made by each country to render itself, through higher tariffs, independent of all others, and would amount in round figures to 6 million tons in 1913, of which our share was 1,300,000 tons.

The European market was to a considerable extent one for partly manufactured iron and steel in the form of pig-iron or semi-products. As we were large exporters of pig-iron to Europe this particularly applies to the British trade. The overseas markets take more of the highly manufactured, and consequently the more highly priced, products.

Our hold on markets such as Italy, Norway, Spain, and even Sweden, which were not more easy of access to Germany than to ourselves, was better maintained, and emphasises the great advantage Germany enjoyed of being able to load material and send it to adjacent markets without breaking bulk. Switzerland imported about 400,000 tons of iron and steel annually before the War, but our chance of securing any considerable portion of her demand was, and is, remote. Where the material had to be

carried by sea the Germans were not successful in the same ratio.

No doubt the European demand will eventually be restored to its pre-War level, and it is unlikely that Germany will again occupy the same commanding position. New producers have been established in Poland and Czechoslovakia, while France and Belgium, with Luxembourg, have had vast extensions to their productive capacity. No one can say whether these new alignments will be of advantage to British trade, but it is difficult to see that they can be of disadvantage. Much depends on how far present international jealousies can be overcome in favour of exchange of raw material, through railway rates, etc. It seems, however, reasonable to assume that the demand will mostly be met by the old sources of supply. It must not be overlooked that there has also been a considerable extension of capacity in Europe, and no doubt European countries will continue their efforts to become self-contained in so vital a war supply as iron and steel products.

Before the War the great neutral markets of South and Central America took over a million tons of iron and steel annually, the biggest percentage being supplied by Great Britain, with the United States, Germany, and Belgium very keen competitors. In 1913 we sent 600,000 tons to this market, and in 1920, 240,000 tons. The United States secured an enormous lead during the War, but this has been lately lost. The South American demand is most carefully watched by many enterprising export firms. The West Coast, which includes Chile and Peru, has been particularly depressed for many years. British capitalists have not given the same attention to Brazil that has fallen to the lot of the Argentine. It is an enormous undeveloped territory, but Brazil is aiming at becoming an iron and steel producer herself, while Chile is already so in a small way. Mexico is also an iron and steel producer, and as regards imports the United States has done most. In South America we have vast British capital investments and much good-will in our favour, but brisk exports mean taking business that has hitherto gone to competitors at lower prices.

China, with its small *per capita* consumption of manufacture, is the nation to which the white man has looked for many years past to provide a great and growing market. In iron and steel this pious hope has fallen very far short of being realised. Indeed this remark applies to the East generally. The *per capita* purchasing power of countries like Siam and Java is so low that, in spite of the large population, the British share of the iron and steel demand expressed in terms of ingots would not keep one of our large steel firms going for a week. These smaller countries of the East have made no attempt to produce steel, for very obvious reasons, but some years ago a steel works was started at Hankow in China, which has had by no means a brilliant career. More latterly Japanese interests have started blast furnaces in Manchuria, while a further plant is projected by the Kailan Mining Administration. Most people are more or less familiar with the financial and political history of China in recent years, and it is not remarkable that the demand is no greater than it was twenty years ago, when to China and Korea we sent 90,000 to 100,000 tons a year. Since the Japanese acquired Korea we could load into a good-sized barge all the iron and steel we send there. As regards China, railway development is dead, and must remain so until political conditions become settled. The railway administration, speaking generally, have not even sufficient cash to pay their accounts, and the trade through merchant firms in the treaty ports is relatively trivial; and, in point of fact, the demand is for such a low-priced product that a large part of the native merchant business is buying scrap steel and shearing it to sizes suitable for sale in the bazaars in the interior of the country. The native buyer will not, and indeed cannot, afford to pay the price for a really good and suitable article. He prefers forging a pocket-knife from soft scrap iron to buying a tempered blade. Within the last two or three months the treaty port trade has improved, but when the writer was in Shanghai in the autumn of 1922—to take one example alone—the stocks of reinforcing steel bars imported during 1920, and which

had been left on the hands of the importers, had not yet been disposed of.

So far as Japan is concerned, the policy of being self-contained has been developed to the point where it has become a fine art. As a result, the country is full of imitations of European and American goods, from whisky or Worcestershire sauce up to rolling-mill engines. Japan is a country of very meagre mineral resources. Her coal resources are none too plentiful. For long an exporter, she was an importer of coal on balance in the first quarter of 1923. Of iron ore in Japan proper there is none, although in Korea, which for some not very obvious reason has been renamed Chosen, some deposits exist. One is bound to admire the enterprise of the Japanese in building up their iron and steel industry in many adverse circumstances, however much one may deplore a national business policy which results in the pirating of any piece of machinery that it is possible to copy. The results financially have been disappointing. The Government Imperial Steel Works at Yawata—a magnificent plant, which would in many respects equal those to be seen in any country in the world—are in a special category. The expenditure on these works is already over eleven million sterling, and it is planned to bring them up to a capacity of 750,000 tons of ingots a year. The Japanese home consumption of iron and steel before the War was well over one million tons, and it was hoped to render the country largely independent of imports. But labour costs have increased rapidly. Last year as much as $2\frac{1}{2}$ yen, or 5s. 6d. a day was being paid for common labour, and the Indian and Chinese works can sell pig-iron to Japan cheaper than they can make it.

There seems to be no hope that we shall be able to compete with India and China in the Japanese market as regards pig-iron. As regards finished steel, the Americans have made a great bid for this market. The country is full of American commercial travellers selling all classes of goods, and in 1920 the Americans sent to Japan close on 600,000 tons of pig-iron, rails, structural material, wire,

and sheets. This was in boom times, but there has been a very large market for sheets and tin-plates in Japan for many years past. The Japanese are now making their own tin-plates and galvanised sheets, and the British manufacturers have been able to make some progress towards recovering the ground they lost during the War, but it would require a more than usually optimistic prophet to forecast a great demand for British iron and steel products in Japan.

This review gives some indication of the prospects of trade in the principal markets in the world, but lengthy and dull though it may seem, to get a really proper perspective it would be necessary to consider the prospects for each description of iron and steel by itself. That is, tin-plates stand, for instance, in an entirely different position from rails, and by considering the figures together we only get a partial view of the prospects. For example, the two descriptions of iron and steel in which Great Britain was most progressive before the War were tin-plates and galvanised sheets. They accounted for well over one-and-a-quarter million tons of our exports. They are high priced products, and in these particular descriptions we were comparatively cheap sellers.

The world has now accumulated an immense tonnage of iron and steel products. The following table shows the approximate amount of pig-iron manufactured by Great Britain, the United States, Germany, and France during the sixty-three years ended 1921.

GROSS PRODUCTION OF PIG-IRON, 1859-1921

Great Britain	.	.	465,000,000 tons.
France	.	.	129,000,000 „
Germany	.	.	375,000,000 „
United States	.	.	742,000,000 „

1,711,000,000 tons.

This quantity of iron has taken sixty-three years to manufacture. At the 1920 rate of output of the iron and steel works of the countries named it would take thirty-two years to put into use a similar tonnage of iron and steel,

but at the highest rate reached by the countries named, viz. 1913 for Great Britain, France, and Germany, and 1916 for the United States, it would only take twenty-three years. Part of the material has found its way to the scrap-heap and has been re-manufactured, but the bulk of iron made is not really consumed, it is only put into use. It would be difficult to say how much of the iron manufactured during the last sixty years is now available, but probably two-thirds is still doing duty, even allowing for the wastage due to the War. If the world's output of pig-iron each year were consumed and wiped out of existence, there would be very much less room for fluctuation in demand.

As it is, a year's output is merely a comparatively small addition to a very large accumulated reserve. Different sets of conditions affect each material. In the case of rails, for instance, the demand is made up from new railways and replacements of existing rails, either because they are worn out or because heavier traffic necessitates a heavier rail. A good deal of the world's demand for rails in recent years has come from this latter cause. In fact, however, the output of rails, formerly the great index of the prosperity of the trade, is overshadowed in importance by other descriptions. The experience of the War years has shown that in many descriptions the demand can be indefinitely delayed, if owing to high prices or financial stringency it is inexpedient to buy. The large demand for commercial purposes that was expected by some experts to follow the rationing of war times has not materialised.

Tin-plate, on the other hand, used either as a food or oil container, may be regarded as being largely consumed when it is put into use. Galvanised sheets have a much longer, but still a limited, life. There is no question, however, that, despite the fact that its output is partly cumulative, the consumption of iron and steel has in the past increased more rapidly than that of commodities such as cotton or wool, which are largely destroyed after a comparatively short period of use.

At any rate, the growth of the world's export trade in iron and steel has been rapid. Thirty years ago the

world's international exchange of iron and steel was only about four million tons. The following figures show how this increase has been made up. The exports of less important countries, such as Russia before the War, Austria, Spain, Italy, Sweden, Czecho-Slovakia, India, China, and other small exporters, have been omitted. They are considerable, however, and in 1920 would amount in pig-iron and ferro-alloys alone to nearly 600,000 tons. Of this the exports of India and China to Japan is considerably more than one-third of the total.

THE INTERNATIONAL EXCHANGE OF IRON AND STEEL IN TONS

	1894.	1904.	1913.	1920.
Great Britain .	2,706,000	3,326,000	4,969,000	3,251,000
Germany . .	752,000	2,770,000	6,300,000	1,750,000
United States .	82,000	1,167,000	2,906,000	4,707,000
Belgium . .	402,000	912,000	1,575,000	935,000
France . . .	154,000	461,000	630,000	945,000
	4,096,000	8,636,000	16,380,000	11,588,000

It will be seen that the world's exchange approximately doubled in each decade, 1895-1904 and 1904-13. In 1920 we were back to the figures of 1906, 1907, and 1908. In the first two months of 1923 the world's exchange was at the rate of 12,500,000 tons a year, with Great Britain doing 30 per cent of the total, or about the same percentage as in 1913. In the last few months our proportion has still further declined. In 1894 we did 65 per cent, and in 1904 38 per cent. The character of the exports has, however, varied considerably. Up to the War we exported great quantities of pig-iron and ferro, usually well over a million tons per annum. In 1920 these figures were halved, and in the first quarter of 1924 were only at the rate of 400,000 tons a year. Pig-iron is a low-priced product. On the other hand, before the War, our competitors sent out large quantities of semi-finished steel, and this applies to France and Belgium to-day, but when analysed it will be found that a large quantity of this

material, if not sent here, is sent to European countries close at hand, and under conditions which would prevent effective British competition. France has, in the last two years, made great strides in the export trade, and is now well over the two-million-tons mark.

So much has been said on the subject of Alsace-Lorraine and the change of national frontiers, which has given to France enormous ore resources and such an important part of the German pre-War iron-making capacity, that it is not proposed to touch on this subject here, except to remark that it appears inevitable that sooner or later arrangements for the free interchange of German coal and French iron ore must be brought about. The Meurthe and Moselle, Alsace-Lorraine, the Saar, Luxembourg, and Belgium are one economic unit, and are very largely dependent upon coal from the Ruhr, which also forms part of that unit. Combined to the greatest advantage, they form one of the most important iron-making districts in the world, and one which naturally would be very formidable in the export market. No one, however, can say as yet what will be the final outcome, and how far any one nation will be advantaged by the re-shuffling of the cards. This, if solved, would in itself be largely an answer to the problem under consideration.

The main conclusion to be drawn is that there seems no good reason to suppose that, given settled financial and political conditions, the world's demand for our exports of iron and steel is likely to cease to expand, in spite of the growing manufacture of iron and steel in some markets which previously imported these. This, however, is in the long run, and does not help the immediate necessities of the trade. It is not difficult to foresee an output of three million tons or more per annum in countries which a few years ago were almost entirely importers. In these days of increasing customs duties it is impossible to hinder the growth of an iron industry in remote countries, even were such a course thought to be desirable. It is, however, a difficult one to build up in a new or sparsely populated country, or in countries where the *per capita* purchasing power is low.

In the first place, it is rare to find the requisite supplies of raw material coupled with cheap transport and good labour. Imported skilled labour is always expensive, and in native labour, efficiency and wages have a habit of rising in unison. Assuming, however, the requisite command of raw materials, it may be possible to make pig-iron and steel ingots. It is a different matter to put down plant to roll rails, angles, tees, joists, tin-plates, sheets, plates, wire rods, and the hundred and one special sections that are always in demand by the merchant trade, in addition to making castings, forgings, nails, tyres, axles, drawing-wire, and the many different descriptions which go to make up the total demand. In a new country it is hopeless to put down plant to make more than a few leading descriptions and realise a profit, and these few descriptions will ordinarily cover but a small portion of the demand. It is an unalterable axiom in the iron trade that production must be on a large scale, and it is in these directions that we must look for demand in the future.

Sufficient, however, has been said to show that the outlook for the iron and steel trade is by no means a rosy one.

No mention has been made of the many problems of a political-economic character. Here we have a multitude of counsellors, from the leaders of the banking world downwards, and it has even become the fashion for chairmen of trading companies—in the absence of a dividend—to air their views at annual meetings. Most of these considerations are applicable to all classes of industry, and no doubt have been, or will be, dealt with elsewhere in the course of these investigations. We cannot compete with hours of labour and rates of wages which are materially below our own. For most grades of labour in a steel works, although the hours may be long, the work during those hours is intermittent. The Germans owed their success to always selling at, or a trifle below, the world's market. For those nations that cannot follow in their footsteps the outlook in the export trade is indeed a poor one.

THE ENGINEERING INDUSTRY

P. HORSFALL

As a preliminary to any discussion of the present position and the future prospects of the engineering industry in this country, it seems desirable to glance, however briefly, at the characteristics which differentiate engineering from other industries, and to examine the conditions in which a market for its products is created.

Engineering is at once a derivative industry and the handmaid of all other industries. Its raw materials are for the most part the finished products of a complicated series of manufacturing processes. There are as yet no serious natural limitations to their availability, and the processes by which they are made suitable for the needs of engineering are so widely known and carried on that the restriction or prohibitive cost of one source of supply rarely causes more than temporary inconvenience. The use made of its raw materials by the engineering industry is not, as for instance in the textile trades, relatively simple, but extremely varied. Moreover, it is subject to continuous change and development; research and technical progress are for ever finding new and better, or rather, more efficient, ways of attaining the same object. It follows that the industry is constantly experiencing the rise of some new branch, and its decay, after a period of prosperity, as soon as its product is supplanted by some other. There is thus a never-ending process of adaptation repeated in the history of individual engineering establishments, and the incidence of unemployment over the industry as a whole tends to be quite irregular.

The market for engineering products is created in two ways—by the need for the replacement of existing plant or by what may be called broadly new development. Plant is replaced either because it is worn out or because it is obsolete, *i.e.* relatively uneconomical. Whether on the whole the life of engineering products—ignoring for the moment obsolescence—tends to become longer or shorter is hard to say. The more careful selection of materials and the growing knowledge of their properties make for durability, but this tendency is probably fully counteracted by the more intensive use to which modern plant is put. The running speed adopted in modern steam turbines, and the pressure and temperature of the steam itself, introduce disintegrating factors which were unknown in the days of the reciprocating engine. The speeding up of trains, for example on the Underground, subjects the rolling stock and the driving mechanism to much greater strains than were contemplated in a more leisurely age.

A great deal of plant becomes obsolete before it is worn out. The electric motor is replacing other forms of drive over a wide field in industry; the central station, with its large modern generating units and long-distance transmission, is being substituted for the small power station with inefficient plant; the water tube boiler has ousted earlier types; and the internal combustion engine is now seen to have potentialities that were scarcely recognised ten years ago. These instances could be multiplied, and they mean simply that there is an unceasing tendency towards the replacement of one kind of plant by another, for the reason that the annual saving in operating costs expected from the change exceeds the charges on the new capital expenditure involved. It is perhaps hardly necessary to add that where considerations of taste enter into the question of replacement, as in the case of a luxury article such as a motor car, this tendency is greatly strengthened.

What is referred to above as “new development” creates markets for engineering products in more ways than one. There is, in the first place, the substitution of

machinery for manual labour, not merely in industry but in farming. There is the desire to perfect the material organisation of undeveloped or only partially developed countries, to provide works of public utility, to make the capital of Latvia or of Mexico more like London or New York, to utilise dormant mineral or other natural resources through the establishment of local industries. To such development there is in theory no limit, if the important question of finance is left out of account. Ultimately, however, all such enterprise has to be paid for as it is undertaken, out of the world's savings, and the margin available for new construction, and particularly for that wide range of speculative development in which an immediate direct return cannot be demonstrated, is at any time restricted.

If we apply this analysis of the market for engineering products to the facts of the general economic situation as it has been left by the war, we may obtain some light on the present position of the engineering industry and on the nature of its prospects, regarded from one point of view. The War was a process by which savings were dissipated for unproductive purposes, and the world is only gradually returning to a way of life in which a margin for new development is created out of savings. Lack of capital has retarded, and is likely for some years to retard, the construction of new railways, bridges, and public works generally, except in so far as that influence has been counteracted by an artificial stimulus, such as inflation in Germany, or in England Government measures for the relief of unemployment. Many of the countries in which development expenditure would in ordinary circumstances be likely to be most rapid have for other reasons lost much of their importance as markets. Political unsettlement has added a new risk to investment ; Russia, China, Turkey, and some of the new European States are examples. Then there are the countries such as Brazil in which an economic depression, reflected in an adverse exchange, has not only discouraged foreign investment but has made it difficult to finance the importation of plant even from

internal savings. It is necessary to add that these two influences—lack of capital and the temporary elimination of certain fields in which the world had been accustomed to invest its savings—taken together lead to a concentration of investment in safe territories such as those of the British Empire. While this may affect adversely some branches of British engineering, *e.g.* the manufacture of agricultural machinery, whose principal markets were in the outside world, the industry as a whole is likely to be less seriously handicapped by these post-War conditions than some of its foreign competitors.

If we turn from development to replacement, it seems clear that the broad effect of the political and economic conditions just described has been to prevent or postpone the replacement of a great deal of plant fit only for the scrap-heap. In many parts of the world, transport systems and public utility undertakings generally have been unable, for some years past, to make proper provision for maintenance and renewals, and are operating to-day with reduced services and worn-out equipment. Russia, of course, is the best instance of this kind of decrepitude, but what has occurred in Russia in an extreme form can be found elsewhere in a modified degree.

There remains only the question of the substitution for obsolete plant of other more modern plant not necessarily of the same kind. The extent to which that is taking place is in a sense a measure of engineering progress, and apart from this, replacement of this kind has a special importance for our present purpose, since its effect is seen mainly in the home market. An acute industrial depression naturally leads to a careful examination of all the factors which go to make up the cost of production. Wages is only one of these, and it may reasonably be claimed that in the last four years much more hard thinking has been devoted to the problem of reducing overhead charges than to that of cutting wages. In such conditions modernisation of plant in any industry is encouraged rather than discouraged by a state of depression, and the manufacturer finds himself deciding not whether he can afford to make

an improvement, but whether he can afford not to make it. From a financial point of view the change is facilitated by the fact that during a prolonged period of bad trade a good deal of the working capital of the concern is not being used in the business, but is held in cash or short-term securities. In fact, since 1921 those branches of the engineering industry whose products are in the stage of rapid technical development—for example, electrical plant or the marine Diesel—have found a growing market largely through the decision of other industries to effect every possible economy in their equipment. A rolling mill or a colliery winder is converted to electric drive; a factory turns its inefficient power station into a sub-station and contracts to buy current; a power supply company orders a large modern generating unit in place of older plant which cannot approach present standards of coal consumption. In these and many other ways economies which might be considered unimportant in a boom period are found essential during a depression.

From these general considerations it should follow that from the point of view of markets the British engineering industry has found less scope in the export trade than before the War, and that in the home market the continuance of the industrial depression has led, through the need for modernisation, to appreciable activity in certain branches of engineering. So far as statistical evidence is available, it confirms this impression. Owing to the immense variety of the engineering industry, to the methods of classification adopted by the Board of Trade and the Ministry of Labour in their returns, and still more to the changes in those methods, relevant statistics are not readily obtainable, and direct comparisons between the last few years and the period before the War are sometimes misleading.

Dealing first with exports, we find that for the products included in the category of machinery (agricultural machinery, boiler plant, electrical plant, machine tools, prime movers, sewing machines, textile machinery, and "other machines") the figures are :

	1913.	1919.	1920.	1921.	1922.	1923.	1924.
£ millions .	33·60	30·74	63·46	74·61	51·54	44·51	41·40*
Thousands of tons }	689	283	462	506	401	433	419*

* At the rate of the first four months.

In words this means that the branches of the engineering industry covered by this group are exporting to-day at the rate *in pre-War values per ton* of 60 per cent of their exports in 1913. The figures for that year were considerably higher than the average for the five years ending with 1913, and to-day's figures represent 70 per cent of the average for that quinquennium. In the next most important category, that of railway material and locomotives, the ratio of present exports in pre-War values per ton to those of 1913 also closely approximates to this figure of 70 per cent. Motor cars, motor cycles, and cycles exported now exceed in numbers those exported in 1913 ; the figures are :

	1913.	Present Time.
Motor cars . . .	8,829	10,000
Motor cycles . . .	16,850	30,000
Cycles	147,000	175,000

If we examine these returns in more detail we find that exports of agricultural machinery, in spite of a slight revival in the last eighteen months, still represent only 20 per cent of the 1913 exports, while the continent of Europe, which in 1913 took 48,000 tons, or two-thirds of the total exports in this branch, now takes only 6000 tons. The exports of electrical plant are now higher than in 1913 by about 12 per cent. The textile machinery trade, even in its boom period of 1921-23, never reached within 10 per cent of its 1913 export figure of 178,000 tons, and has now relapsed to a rate of about 100,000 tons per annum.

A full analysis of exports by destination would be difficult, if not impossible, but the figures which are available for certain classes of machinery probably indicate not unfairly the markets which have been lost. Europe, as might have been expected from its impoverishment

and state of political uncertainty, has bought much less. Apart from agricultural machinery, for which the figures, given above, are one-eighth of those of 1913, exports of prime movers to Europe have fallen from 32,000 tons in 1913 to 7000 in 1923, exports of textile machinery (owing mainly to the complete disappearance of the demand from Germany and Russia) from 79,000 tons in 1913 to 33,000 in 1923, and exports of "other machinery" from 42,800 in 1913 to 21,500 in 1923. South America shows only a fraction of the pre-War demand. Between the years 1913 and 1923 agricultural machinery exports have fallen from 9700 tons to 1300, prime movers from 11,000 tons to 2200, sewing machines from 25,400 machines to 1800, textile machinery from 13,000 tons to 7000, and other machinery from 27,000 to 10,000. The Argentine took 11,500 tons of locomotives in 1913, but an average of only 550 tons per annum between 1921 and 1923. Probably there is no one cause which accounts for this falling off in the South American market. While German competition can hardly have attained the pre-War severity, that of the United States has been extremely formidable since the War; but there is reason to think that an even more important factor has been diminished consumption owing to adverse financial and economic conditions. In contrast to Europe and South America, India has been an expanding market even in this difficult period. From 1913 to 1923 exports of prime movers have increased from 12,000 to 14,000 tons, of textile machinery from 50,000 to 67,000, of other machinery from 24,000 to 30,000, and of locomotives from 15,000 tons to an average of 20,000 per annum during the three years 1921-23.

Imports of machinery into Great Britain are about £4 millions a year at the present time, when expressed at pre-War values per ton, as against £7·27 millions in 1913. Imports are therefore down considerably more than exports, and it may be presumed that the home industry has benefited to some extent at the expense of foreign firms. The movement of the home market can best be followed through the unemployment returns. Those returns are not complete nor easily intelligible, and the

figures of unemployment amongst Trade Union members, which are in other respects the most useful, do not distinguish between engineering and shipbuilding. But a collation of the different returns appears to indicate that the percentage of unemployed workers in the engineering industry has diminished from its highest point of about 28 per cent in April 1922 to about 15 per cent in March 1924. It is clear from these figures that there has been a substantial improvement both in the home and the export trade in the last two years. Finally, as an index of that tendency to modernisation to which reference has been made, it is of interest that the number of units of electricity generated in Great Britain, which never exceeded 2000 millions in any one year before 1914, rose from 4628 millions in 1918 to 5167 millions in 1921 and 5738 in 1923 ; and that between February 1920 and March 1923 the Electricity Commissioners authorised the addition of over 1,250,000 kw. of plant to the generating capacity of the country, which in 1918 had not reached 2,200,000 kw.

If we proceed to consider what are the prospects of British engineering in the future, it is necessary to bear in mind that the War introduced into the industry an additional number of workers altogether disproportionate to the needs of normal development. The number of insured persons in engineering and ironfounding rose from 790,000 in June 1914 to 1,141,000 in September 1922, and there appears to have been a further slight addition since then. If the percentage of unemployment is to be reduced to an average pre-War figure, the industry has not merely to hold its own in world competition but to gain ground on its rivals.

The last few years have revealed both the strength of the industry and the dangers to which it is likely to be exposed. On the credit side there are many items, and it is right that they should not be undervalued. The War brought about immense improvements both in the mechanical equipment and the workshop methods of the industry. The most modern plant was installed, and every scientific device for cheapening the cost of produc-

tion and promoting accurate work within narrower limits came into general use. All that the world had to teach us in regard to costing systems and the pre-costing of workshop operations became common knowledge. Much of this remains as a permanent improvement. Payment by results has been greatly extended, and many old prejudices and restrictions affecting the use of semi-skilled and unskilled labour have disappeared, probably for ever. Factory conditions have been improved out of recognition. Moreover, in spite of the reduction of the normal working week from 54 to 47 hours, there is little evidence at the present time of a reduction in output per man, and wage rates, at 54s. as against 37s., are lower in real values than in 1914. In the qualities of superior design and workmanship, which have always enabled the British manufacturer to command a higher price for his products in the markets of the world, there are few signs of deterioration. Nor is there any lack of technical or commercial initiative or enterprise. If this should seem too complacent or optimistic a view, it is worth considering certain concrete proofs. In the successful development of large, high-speed steam turbines and electrical generators, British firms are leading the world. Not one but a number of makes of light car have been produced in the last two or three years, much superior in design and finish to the foreign cars which had held that field, and comparable in price. Of the heavy electric locomotives ordered in open world competition in the same period, British firms have secured more than all their competitors taken together.

On the other side of the balance-sheet, the principal item can best be expressed in the form of a dilemma. Can British engineering get back to anything approaching full production unless, through the settlement of Europe and a consequential increase in the volume of world trade, old export markets are reopened? If, on the other hand, that condition comes about, can we hope to withstand the full blast of German competition? It may be thought that this statement of the problem is inadequate, in that it ignores both America and the new competitors created

by the establishment behind a tariff wall of local industries in countries such as Australia and India. But however formidable American competition may become in the more distant future, when its own market approaches saturation, it holds few terrors either on the ground of price or quality or commercial supremacy at the present time, and there seems no good reason to doubt the ability of British manufacturers to recover a fair share even of the South American market when trade revives. The newer competitor in such countries as Australia has serious difficulties to contend with in the form of expensive materials, highly paid and relatively inefficient labour, and a limited market which precludes the possibility of large-scale production. Germany must be a far more formidable rival than any of these. The temporary and artificial advantage, which she has enjoyed since the War, of a depreciated currency will disappear, and a settlement also presupposes a burden in respect of rates and taxes comparable to our own. But this is not all. We may have to face a definitely lower standard of wages, an industry not inferior in equipment to ours, admirably organised from a technical and scientific point of view, and with a direct incentive to conquer the markets of the world. Whether the present level of wages in Germany, however, can in the long run be maintained is at least doubtful; it is more natural to expect that they will rise automatically as prosperity returns, and that they will ultimately stand in the same relation to wages here as before the War.

In propounding this dilemma it is not intended to suggest that we are free to choose on which horn we will be impaled, or that if we were we should be likely to select the suppression of German competition at the price of a continuance of the present world depression. Nor is it feasible, after drawing attention to the possibility of keen competition from Germany, to express any useful opinion as to the probable result. That depends not merely on Germany but on our own industry and on those who are engaged in it. But it is worth pointing out that the relative engineering strength of the two countries is not

in any obvious way more favourable to Germany now than before the War, and that competition, if it comes, is likely to be most acute at the outset, when Germany may have certain advantages which will hardly continue, and before the effective world demand for engineering products has been fully restored.

THE SHIPBUILDING INDUSTRY¹

Professor J. H. JONES

I. General Characteristics

WITH the possible exception of tin-plate manufacture (1891-1896) I know of no important British industry which has suffered a depression so severe and at the same time so prolonged as that now suffered by the shipbuilding industry.

Shipbuilding is essentially an "assembling" industry. Not only does it directly employ a large number of skilled workers, but it also gathers up the products of skilled labour in other industries, such as marine engineering, chain-making, iron, steel, and copper manufacture, coal mining, and the furnishing trades, all of which are suffering, in greater or less degree, from the present depression in the industry which they serve. Moreover, a ship which satisfies all the tests of efficiency is usually a thing of beauty, and the building of ships is one of the few remaining trades in which a direct appeal is made to good workmanship and to the artistic sense of the workers of all categories. Much of the effort which, in such industries as textile manufacture, is concentrated upon marketing problems is

¹ Most of the statistics given in this article were drawn from the following sources: Lloyd's *Register of Shipping* and the *Reports of the Chamber of Shipping of the United Kingdom*. Many of the facts were obtained from articles in Brassey's *Naval and Shipping Annual*, "Fairplay," the Annual Supplements of the *Glasgow Herald*, and the *Report on the Shipping and Shipbuilding Industries*, by the Departmental Committee of the Board of Trade, 1918 (Cd. 9092). Although I consulted a number of employers, the views herein expressed regarding the future prospects of the industry are entirely my own.

devoted, in shipbuilding, to problems relating to design, stability, and propulsion.

Ships may be classified in various ways, according to method of propulsion, size (or gross tonnage), purpose or age, and all four methods are employed in the present article. Statistics show the extent to which the sailing ship has given way to the steamship, and suggest that in the near future oil may prove a formidable rival to coal as boiler fuel and to steam as a generator of power. Ships vary tremendously in size, but the average size increased steadily down to the outbreak of the late War. A cargo boat of 7500 gross tons is usually taken as the standard for purposes of comparison. They also vary in age. The average life of a ship is usually reckoned at twenty years, that is, the normal sum set aside for depreciation is 5 per cent of the capital.¹ But many ships built forty and even fifty years ago are still doing useful work on the sea, though not necessarily the work for which they were originally intended. Every year about 600,000 tons net (*i.e.* nearly $5\frac{1}{2}$ per cent of total tonnage) was removed from the register of this country : but two-thirds of this amount was sold to people living under foreign flags. The age and size of a ship are normally the chief factors influencing its selling price relatively to the prices of other ships. Generally speaking, age is a more important factor than size, while, other things being equal, the smaller ship commands a higher price per gross ton than the larger. Adaptability, in so far as it is distinguishable from size, is the third factor influencing the value of a ship. Some vessels are specially designed for particular purposes. Apart from warships and fast passenger liners there are intermediate liners ; ships which ply constantly in tropical climates and offer appropriate accommodation for passenger and cargo ; general cargo boats ; oil tankers, refrigerating vessels, cable layers, whalers, life-boats, and other types of specialised vessels. The tramp steamer has been called the " backbone of

¹ The agreed normal rate of depreciation for income tax purposes (on ships other than those purchased at second hand) is now 4 per cent of the prime cost (see *The Accountant*, Feb. 10, 1923).

British Shipping." The importance of this type is shown by the fact that, immediately before the War, it constituted about 60 per cent (of tonnage) of the total ocean shipping of this country, and we carried over half the world's tonnage of cargo. The tramp varied in size up to about 5000 tons gross (or 8000 tons dead weight); it moved about at a speed of 8 or 9 knots, without any previously arranged schedule of sailings, travelling wherever there was cargo to be secured.

The following table shows the percentage of the world's gross tonnage launched from the shipyards of Great Britain and Ireland:

1892-4 . . .	81.6 per cent.	1895-9 . . .	72.0 per cent.
1900-4 . . .	59.9 " "	1905-9 . . .	61.0 " "
1909-14 . . .	. . .	. . .	61.9 per cent.

It will be observed that after a dozen years of rapid growth of foreign competition there followed a longer period during which the competitive position of this country was comparatively stable. In a normal pre-War year about 20 per cent (including war vessels) of the output of our shipbuilding yards was made on foreign account; moreover, a large number of older vessels were sold abroad annually by British shipowners and replaced by new vessels, and this factor should be taken into account in estimating the importance of the industry in the exporting group.

Before the War the shipyards on the Clyde absorbed about two-thirds of the products of Scottish steel works, in spite of which a large proportion of forgings (crankshafts, propeller shafts, etc.) for commercial work was imported from abroad. The output of shipping was about 35 per cent of the total output of the country, while the combined output of the Tyne, the Wear, and the Tees and Hartlepool amounted to one-half the total. The remainder was distributed between other places such as Hull, Southampton, London, Merseyside, etc. In 1906 about 14 per cent, and in 1913 about 27 per cent of the value of the total output (launched) consisted of ships of war. Estimates for tonnage in a normal year vary between 10 and 25 per cent. In the highest estimates it is

possible that the gross tonnage of merchant ships has been (wrongly) compared with "Displacement" in the case of warships, but I believe, nevertheless, that 10 per cent is too low, and that 12½ to 15 per cent (excluding the output of Admiralty Dockyards) is nearer the truth for a normal pre-War year. The industry was strongly competitive. Including marine engineers and about 35 repairing firms there were above 150 establishments, representing a considerable variety of types and sizes. Some firms bought all the machinery used in their yards, others owned large engine shops; the remainder made marine engines only. Some, such as the armament firms, made their own steel products. Some did repair work only, others combined building and repairing; some specialised on particular types of vessels, others did a variety of work; some were, in part, speculative builders who sold the ship on the "market," others built only on contract; some were wealthy enough to finance shipowners by spreading payment over a long period, others were not so fortunately situated. There were comparatively few public companies in the industry, with the result that competition was keen and its results difficult to gauge. Since the War there have been considerable changes in control—either by means of amalgamation or by some loose and more obscure form of interlocking. But the industry remains intensely competitive, and the danger of monopolistic control is so remote as to be negligible.

The following statistics show (1) the gross merchant tonnage, in millions of tons, launched in Great Britain and Ireland in the years 1892 to 1913; (2) the approximate fluctuations in prices (in thousands of pounds) within each year of a new ready cargo ship of 7500 gross tons.

The first is taken from Lloyd's *Register*, Annual Summary of Shipbuilding, and gives the figures to the nearest 10,000 tons; the second is raised from a chart prepared by "Fairplay," and as it is difficult to convert a chart into exact figures, the table should only be regarded as giving very rough approximations.

	1892.	1893.	1894.	1895.	1896.	1897.	1898.
(1)	1·11	0·84	1·05	0·95	1·16	0·95	1·37
(2)	..	..	..	..	..	..	£48·6

	1899.	1900.	1901.	1902.	1903.	1904.	1905.	
(1)	1'42	1'44	1'52	1'43	1'19	1'21	1'62	
(2)	{56'5 48'5	{60'6 52'0	{56'0 48'5	{48 43	{50'5 39'5	{39'5 38'5	{44'5 36'5	
	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
(1)	1'83	1'61	0'93	0'99	1'14	1'80	1'74	1'93
(2)	{44'0 40'0	{41'0 39'0	{38 36	{38'5 36	{39'5 37	{47 40'8	{58 48	{54 47

The purpose of these tables is to show that the ship-building industry, before the War, was subject to extreme fluctuations, whether these be measured by output or by prices. The swing of the pendulum was probably more violent than in any of the other industries connected with international trade, the difference being due to the peculiar features of the industry. In the first place, the unit-product is large and expensive. Before the War the average time taken in building a ship was said to be about twelve months.¹ There was no continuity of supply as in steel or cotton manufacture. A short delay in placing a new ship on the stocks meant unemployment on a large scale. In the second place, the product and the building plant are highly specialised, and temporary loss of orders in one direction could not, as in most other industries, be neutralised by successful search for orders in some other direction. The third feature, which emphasised the importance of the first two, is present in most constructional trades, though it is perhaps more pronounced in shipbuilding than in any of the others. It has already been stated that the average life of a ship is about twenty years. Suppose, first, that ocean traffic over a period is constant and sufficient to maintain 1000 ships in full employment, it follows that an annual output of 50 ships will be required to maintain the fleet in a state of efficiency. Suppose, next, that traffic in one year increases 5 per cent, the immediate demand for new ships will be

¹ If the smaller classes of vessels are included this seems to be an over-estimate. The time usually quoted for a cargo steamer of 7500 tons, without "trimmings" of any kind, was about seven months. The higher estimate is obtained by comparing, over a series of years, tonnage launched during the year with tonnage under construction on the last day of the previous year. The returns exclude vessels under 100 tons.

increased to 100 ; and a further increase of 5 per cent in traffic during the following year would mean a total demand for 150 ships. If traffic then ceased to advance, but remained at the higher level, the demand for new additional ships would disappear, and the requirements for replacement would amount to 55 ships a year.

Thus a depression may—and frequently does—occur in shipbuilding even when traffic requirements do not diminish. The fluctuations in practice are not so violent as is suggested by this illustrative case. During a shipping boom ships are retained in service when otherwise they would be broken up. Liner companies generally act independently of the immediate situation, and look far ahead. Shipbuilders, when considering whether or not they should extend by preparing new berths and slips, or building new yards, are influenced less by the momentary rush or absence of orders than by the probable trend of trade. But cargo steamship owners are often strongly influenced by actual and immediately prospective freight rates, and when these are high and cargo space is insufficient, they place orders for new ships and create a boom in the shipyards, and the boom is intensified*by the offer of a premium for early delivery. Then orders fall away quickly (not because traffic has diminished but because the probable increase has been met), and in due course, when those already on the stocks have been launched, depression sets in, and continues until the older ships are scrapped. The present depression differs from those characteristic of earlier years mainly in respect of intensity and duration.

II. The Depression

It is unnecessary to examine in detail the post-War boom in shipbuilding which, like the present depression, was world-wide. Its manifestations in freight rates, shipping values, and ship production are obvious from statistics which are given below. It was not due to a real shortage of shipping resulting from the submarine campaign and other destructive agencies employed during the War. The

total world supply in 1919 was almost as large as in 1913, though the quality of that supply was by no means so good. Moreover, the amount of merchant shipping actually employed in foreign trade remained, until last year, considerably less than in 1913.

There was doubtless a temporary shortage due, first to the demobilisation and return overseas of the armies which had sailed to Europe during the War, and secondly to the difficulty of collecting, refitting, and redistributing the ships which had been employed on War service. Nevertheless the boom was in the main but the companion of the boom in other trades, appearing in intense form in shipping values and shipbuilding. The immediate scarcity of and pressure upon cargo space produced an abnormal rise in freight rates, and the prospect of large immediate profits led to the formation of speculating shipping companies which pushed up the prices of ships to an absurd height. Whereas the general level of wholesale prices had only risen a little over 200 per cent between July 1914 and February 1920, shipping freights had risen 500 per cent.¹ No one with experience of shipping could reasonably expect so great a disparity to continue ; but speculators immediately " capitalised " the disparity by bidding grotesque prices for ships for the purpose of securing the profitable freight rates, and thereby stored up trouble for themselves and for those with whom they became entangled.

The tide began to turn about the end of February 1920. During the first quarter of that year second-hand ships were being sold at an average of £58 : 18s. per gross ton, but a year later the average price had fallen to £10 : 8s. per gross ton. The index number of freight rates showed a fall between February and December 1920 from about 691 to about 280. The depression spread to the shipyards, but, in spite of the fact that many contracts were cancelled and the work on others was suspended, it did not become acute until 1921. Since then the situation has steadily grown

¹ Most of the advance took place after the Armistice. During the War the rise in the average freight rate was held in check by requisitioning and by employment at Bluebook rates.

worse ; 1922 was worse than 1921, and last year was worse than 1922.

The extent of the depression may be gathered from statistics of wages, employment, idle berths, production, shipping freights, prices of ships, and the losses of shipping companies.

(a) WAGES.—So much has recently been written on wage disparities that it is only necessary to refer to the fact that at present (March) the wages rates of skilled shipyard workers are only 7s. per week above the pre-War rate, and are smaller in amount than the wages of an attendant in a public lavatory.¹ Many firms find it almost impossible to secure apprentices, particularly in view of (1) the relation between apprentice rates and unemployment insurance payments, and (2) the fact that youths qualify for unemployment pay at about the same age as they normally become apprentices. The wages of engineers are 17s. per week above the pre-War rate.

(b) Statistics of unemployment are not a reliable index of unemployment in any one trade. Many shipyard workers have emigrated to foreign lands, others have found employment in other trades. Of the latter, those who only found temporary employment would now be included among the unemployed of such trades. Thus the following figures understate the existing depression in shipbuilding and marine engineering :

PERCENTAGE OF UNEMPLOYED WORKERS

		1921.	1922.	1923.
Corresponding dates in March	. . .	—	36·3	30·0
„ „ June	. . .	34·66	38·6	32·1
„ „ September	. . .	28·27	37·1	42·0
„ „ December	. . .	34·5	35·6	34·2

It should not be forgotten that those who entered the industry during the War remained longer, after the War, than was the case in engineering, where, shortly after the

¹ Unskilled workers, who form the majority, are paid rates about 85 per cent above the 1914 rates. All classes share the benefit of the reduction in hours.

Armistice, so many "dilutees" were dismissed. The latter were absorbed into other trades sharing the post-War trade boom.

(c) IDLE BERTHS.—Continuous statistics relating to idle berths would not afford an ideal test of employment ; some classes of ships offer greater employment than others. Further, full statistics of this character are unobtainable. But the following figures, meagre though they are, show how inadequate are the above unemployment figures. At the end of 1921 work was proceeding on 134 occupied berths ; work had been suspended on 83 occupied berths, while 277 berths were unoccupied. At the end of 1922 the figures were 112 (work proceeding), 50 (work suspended), 327 (unoccupied)—5 berths having been abandoned. In October 1923 the corresponding figures were about 126, 41, 321.¹ Moreover, the average size of vessel, which showed an advance in the earlier post-War years, now appears to be falling. For example, whereas in 1913 there were launched on the Clyde 370 vessels with a gross tonnage of 756,976 tons (and 1.1 millions I.H.P.), in 1923, 122 vessels were launched with a gross tonnage of 175,528 tons (and 0.17 millions I.H.P.); that is, the average tonnage fell from 2000 to 1400, and I.H.P. from approximately 3000 to 1300 per vessel. During the year a large number of barges, lighters, and motor launches were built, but very few large vessels.

(d) PRODUCTION.—Statistics of production assist the reader in estimating the intensity of the depression. But they should be used with caution. Figures stating the tonnage commenced or launched may convey a wrong impression of the actual work done during the year to which they refer ; some ships may be commenced or launched early, some late. Before the War the average time taken to build a ship was about twelve months, now it is about

¹ During the post-War boom some shipowners secured land and built new berths with the idea of becoming builders. By the time these were ready the slump had started, and they were never used. Apparently some of these shipowners now find it cheaper to give contracts to old-established builders than to build ships in their own newly constructed berths.

fourteen months.¹ Similarly, figures relating to tonnage under construction at any date do not indicate whether work is actually proceeding; and we know that in recent years work has been suspended on a large proportion of the vessels under construction. By recommencing work which has been suspended trade may partially revive without new tonnage being laid down.²

The following statistics (abstracted from Brassey's *Annual*, 1924, p. 593) give the number and gross tonnage of vessels built in Great Britain and Ireland:

	(a) Steamers and Sailing Ships launched.		(b) Steamers, Motor Vessels, and Sailing Ships under Construction on December 31.	
	No. of Vessels.	Tonnage, in Thousands of Tons.	No. of Vessels.	Tonnage, in Thousands of Tons.
1910	500	1·143	363	1·131
1913	688	1·932	513	1·957
1919	612	1·620	757	2·994
1920	618	2·056	921	3·709
1921*	426	1·538	515	2·640
1922	235	1·031	315	1·468
1923†	...	0·646 ‡	...	1·395 ‡

* Ship-joiners' strike.

† Boilermakers' dispute.

‡ Taken from Lloyd's Register.

It is noteworthy that the tonnage under construction on December 31, 1920, largely exceeded the total launched during 1921 and 1922—evidence that work on a considerable number of ships was not merely suspended but abandoned. The table also suggests that the worst period of

¹ Taking seven months as the pre-War standard, the present standard is said to be nearly nine months.

² On the other hand, a shipbuilder may, and sometimes does, close the suspended contract with the shipowner and sell the unfinished ship, at a "bankrupt" price, to another buyer who will cause the ship to be finished: that is, the builder may cut his loss on the unfinished vessel and unload all further risk on the new buyer. Consequently, we should not assume that resumption of work on a suspended contract *necessarily* means a revival in trade. It may signify despair rather than hope on the part of the shipbuilder.

depression was last year, and this conclusion is supported by other evidence.

(e) FREIGHTS AND SHIP VALUES.—The following tables show the extent to which the depression has affected freight rates and the prices of new ships.

Table A gives the prices, at specified dates, of a new, ready cargo steamer of 7500 gross tons. The prices have been taken from a chart published by *Fairplay*, and in view of the difficulty of converting a chart into a table of figures, they should be regarded merely as rough approximations.

Table B contains the index numbers representing, at specified dates, the geometric average of (1) freight rates, (2) time charter rates on all shipping routes. The average for 1920 is represented by 100. The table is prepared by the

	A. Price of Ships.	B.		C. Freights.	D. Whole- sale Prices.
		Freights.			
		(1).	(2).		
	£				
1898 (Sept.) . .	48,500	..	..	..	..
1900 (Dec.) . .	60,500	..	..	..	..
1908 (June) . .	36,500	..	..	..	..
1912 (Dec.) . .	58,000	..	..	..	..
1913 (average) . .	..	..	..	116·34	..
1914 (June) . .	42,500	..	..	..	..
1914 (end July) . .	..	..	..	..	116·6
1917 (Jan.) . .	187,000	..	..	..	..
1919 (Jan.) . .	169,000	..	..	..	..
1920 (Jan.) . .	232,000	..	..	..	..
(Feb.) . .	..	..	..	690·95	..
(March) . .	258,500	..	..	..	379·6
(Dec.) . .	..	..	..	280·14	269·3
1920 (average) . .	..	100	100	..	..
1921 (Jan.) . .	105,000	..	..	..	..
(Dec.) . .	..	..	..	156·67	198
1922 (Jan.) . .	60,000	33·0	29·9	..	..
(Dec.) . .	..	..	..	136·57	193·8
1923 (Jan.) . .	65,625	29·4	24·1	..	..
(June) . .	62,500	..	..	..	..
(July) . .	(fluctuations slight)	27·6	20·9	120·28	190·1
(Aug.) . .		25·0	20·2	116·53	190·4
(Sept.) . .		26·4	19·2	119·88	195·3
(Oct.) . .		27·3	19·4	125·49	196·4
(Nov.) . .		27·3	19·4	129·38	206·4
(Dec.) . .		28·1	20·2	130·08	208·2
1924 (Jan.) . .	60,000	30·8	21·6	136·25	211·9
(Feb.) . .	..	31·6	24·1	144·01	212·2
(March) . .	..	..	..	142·05	..

Chamber of Shipping, and the figures are periodically published in the *Statist*.

Table C gives the index number, at specified dates, for freight rates as published by the *Economist*. The average rate for 1898 to 1913 is represented by 100.

Table D gives the *Economist* index number of wholesale prices. The average for 1901-5 is represented by 100.

The above tables show the following facts: (1) The fall in freight rates and ship values in 1920 was very rapid. (2) Although rock-bottom price was reached for ships about the end of 1921, freight rates continued to fall until August 1923, when they were at approximately the pre-War level. (3) Freight rates have risen appreciably during the last few months, but shipping values have not moved in sympathy. (4) The present price of ships is even below that of December 1900, and only about $3\frac{1}{2}$ per cent above that of December 1912; it is, however, nearly 25 per cent above the price ruling immediately before the War. (5) Assuming conditions immediately before the War to be the standard, there is a serious disparity between freight rates and ship values on the one hand and, on the other, the general level of wholesale prices. This disparity serves to indicate the relative intensity of depression in the shipping and shipbuilding industries.¹

(f) EARNINGS OF SHIPPING COMPANIES.—It has already been stated that most of the shipyards are owned by private firms. Public companies usually control not only building yards and engine shops, but also iron and steel plant and, in some cases, coal mines. The former publish no profit and loss account; the balance sheets of the latter cover too many branches of industry to serve as a guide to the profit or loss incurred in shipbuilding. We are thus compelled to turn to the accounts of shipping companies. *Fairplay* publishes summaries of the accounts of a selected group of cargo and passenger liner companies, but these do not enable us to make any elaborate statement. As is stated in *Fairplay*, many of the companies "now submit their accounts to their shareholders in such a way as to make it

¹ These considerations, together with evidence given later, suggest that ship values will begin to advance shortly.

impossible to analyse the figures, with a view to showing what progress, if any, has been made, or what losses have had to be met out of the reserves." Interest on investments is frequently mixed up with proceeds from voyages. But, as far as the cargo companies are concerned, last year (1923) was apparently the worst for at least thirty years. Of about 70 companies examined at least 20 experienced a net loss on the voyages of the year; but what precisely is meant by a net loss it is impossible to say without examining the costing system employed. "No fewer than 18 of the companies show a loss on the year's working against 19 in 1922; 36 companies pass their dividend, against 31 last year; and 46 set aside nothing for depreciation against 38 in previous year" (*Fairplay*).

The total paid-up capital of the group amounted at the beginning of this year to £27,857,908, and the total payable on loans, bills, etc., to £13,891,884, making a total of £41,749,792. The tonnage in the books (1,667,168 gross tons) was valued at £44,682,878 (including, in many cases, investments), which worked out at a book valuation of £26:16s. per ton. But the average price at prevailing market rates would only be about £8 per ton, and new ships could be constructed for about £10 per ton! The average dividend for last year was 4·81 per cent, but the amount set aside for depreciation fell short of the normal (5 per cent) by £1,228,994. *Fairplay* concludes that if the vessels were written down to market value not only would there be no dividend, but there would be a large debit balance. Companies which were formed during the boom and which purchased ships at the prices then ruling, and often with borrowed money, now find themselves heavily indebted, without hope of recovery. The companies which own passenger ships suffered less acutely, but it is impossible to make more definite comparisons upon such meagre information as is available.

III. Prospects of Recovery

In the second section evidence was submitted indicating the severity of the depression in shipping and shipbuilding.

An attempt will now be made to examine the causes of the depression and the prospects of recovery. The two subjects are so closely interwoven that they may be considered jointly. It is necessary, however, to distinguish between the general demand for shipping and the specific demand for new ships, for it is by the latter that the future of the shipbuilding industry will be determined.

The shipping slump since 1920 has been largely due to a reduction in ocean traffic. This fact is so obvious that it calls for no further comment. But available evidence suggests that 1923 was a far better year than is generally supposed. The total tonnage of shipping (employed in foreign trade) which entered the ports of Great Britain and North Ireland last year amounted to 51·1 million tons, as compared with 49·1 m.t. in 1913 ; the tonnage cleared from the ports amounted to 70·7 m.t., as compared with 68·0 m.t. in 1913. These figures are not conclusive evidence that the volume of trade was greater last year than in 1913. We do not know, for example, whether the ships were as fully loaded, whether larger ships were employed to do the work which, in 1913, was done by smaller ships, and whether cargo was carried a greater distance. Moreover, tonnage statistics may be appreciably affected by the accident whether ships enter or leave port at the end of one year or the beginning of the next. Nevertheless the figures, when compared with those of the previous years of depression, suggest that the carrying trade had materially increased. The following statistics of exports of bunker coal are also significant :

1912.	1913.	1920.	1921.	1922.	1923.
18·3 m.t.	21·0 m.t.	13·8 m.t.	10·9 m.t.	18·2 m.t.	18·2 m.t.

The exports for 1922 and 1923 suggest that the requirements for ocean commerce in all directions are almost as great as in 1913, and they are the more encouraging in that, as we shall find later, a considerable and growing amount of ocean cargo is now conveyed in oil-burning ships. But this evidence, like the other, is not conclusive, for it does not indicate whether the proportion of the world's bunker coal

now supplied by this country is the same as in 1913. When we turn from foreign trade to coastal trade we find that the tonnage of arrivals and departures last year amounted to 29.5 m.t., as compared with 45.1 m.t. in 1913. This reduction, coupled with the evidence that traffic by rail and road was probably greater than in 1913, suggests that the coastal trade has suffered more from the competition of other forms of traffic than from the reduction in domestic trade. What the railways have lost to the roads they appear to have captured from ships engaged in coastal traffic.¹ Even allowing for this fact it may confidently be stated that the reduction in general demand for shipping has now lost most of its importance as a factor in the depression in the shipping industry. Evidence in support of this conclusion is found in the following statistics (published by the Chamber of Shipping) relating to idle tonnage :

BRITISH VESSELS AND TONNAGE (NET, IN MILLIONS OF TONS)
LAID UP AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM

	1921.		1922.		1923.		1924.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
Jan. 1	..	..	621	1.18	363	0.65	301	0.61
April 1	..	..	422	0.73	293	0.51	..	..
July 1	883	1.65	533	1.03	347	0.67	..	..
		(25th)						
Oct. 1	654	1.16	415	0.75	374	0.73	..	..
		(25th)						

It should be observed that the above figures exclude foreign tonnage laid up in British ports and British tonnage laid up in foreign ports.

The reduction in idle tonnage took place while new vessels were being launched and made ready for service. In 1921 the gross tonnage of merchant vessels launched in Great Britain and Ireland amounted to approximately 1.54 m.t., in 1922 to 1.03 m.t., and in 1923 to 0.65 m.t.

¹ If the statement is true it has an important bearing upon the controversy between railway companies and traders regarding the railway rates charged between ports in this country.

The main cause of the present low freight rates in shipping and the depression in shipbuilding is to be found in the enormous increase in the world's supply of ships since 1919. The following table reveals the fact that the total supply is now far greater than the normal requirements of ocean traffic :

NUMBER OF VESSELS AND GROSS TONNAGE (TO NEAREST HUNDRED THOUSAND TONS) IN EXISTENCE

Date.	Steam.		Sail.		Total.		Percentage owned in the United Kingdom.
	Number.	Million Tons.	Number.	Million Tons.	Number.	Million Tons.	
1890	11,108	13·0	21,066	9·1	32,174	21·1	48·4
1900	15,898	22·4	11,942	6·6	27,840	29·0	45·8
1910	22,008	37·3	8,045	4·6	30,053	41·9	41·9
1913	23,897	43·1	6,694	3·9	30,591	47·0	39·8
1919	24,386	47·9	4,869	3·0	29,255	50·9	32·5
1922	29,255	61·3	4,680	3·0	33,935	64·4	30·0
1923	29,245	62·3	4,261	2·8	33,507	65·2	29·6

It will be observed that the total tonnage increased from 47·0 m.t. in 1913 to 65·2 m.t. in 1923, that is by (roughly) 18 m.t., or 38 per cent. Further, the producing capacity of the world was enormously increased during the War. In the two "boom" years, 1912 and 1913, the world gross tonnage launched amounted to 6·2 m.t., and in 1919 and 1920 to 13·0 m.t. If we accept these figures as representing producing capacity there was an increase of over 100 per cent. At the end of the War there were about 500 berths in this country, representing an increase of about 25 per cent. The greatest expansion, of course, occurred in the United States.

More important than the existing supply and the producing capacity of 1920 are the conditions likely to prevail in the near future. As far as supply is concerned the ages of the ships are clearly an important factor. Approximately one-fifth of the vessels (one-third of the gross tonnage) are under five years of age, and nearly one-third (roughly 22 per cent of the tonnage) are twenty years and over. Nearly one-half the vessels (one-third of the ton-

nage) are fifteen years and over. These figures are important, if we assume twenty years to be the average life of a ship. There are now in existence 12,916 vessels (18.2 m.t.) in excess of the 1913 totals, and of the present total of 29,246 vessels (62.3 m.t.) 9530 vessels (13.5 m.t.) are twenty years of age and over, and 13,128 vessels (20.8 m.t.) are fifteen years and over. If we "scrapped" the ships above twenty years of age the excess of supply would apparently be reduced to a very low figure. The problem is not, of course, so simple as the last statement implies. Ships vary enormously in size, and are used for many purposes; nor is there any uniformity in the degree of over-supply of different sizes and types. New oil-tankers, for example, are still in considerable demand. Further, many ships of twenty years and over continue to be highly efficient from every point of view. On the other hand, a considerable number of the vessels built during and immediately after the War are not comparable in value with those built earlier. It is far more difficult to build a ship that will keep out water than to build a ship. The nuts and bolts, rivets and screws of many of the vessels built during the War are like those of many a cheap motor car. Sir Westcott Abell stated in 1923 (*Brassey's Annual*) that "in all probability, about 3,000,000 tons of War-built vessels, a million or more tons of normally obsolete ships, and a million tons which have become obsolete owing to the recent developments will have to be disposed of before the world's fleet approximates to the pre-War standard of efficiency." And the pre-War standard allowed for a considerable proportion of tonnage approaching the veteran stage. But the mere existence of obsolete vessels produces a depressing effect upon both the freight market and the demand for shipbuilding. While they are laid up they deteriorate rapidly, and are costly to maintain. In spite of these facts and the present high price of "scrap," many owners, having purchased at ridiculous prices during the boom, are loth to part with their property, thereby surrendering the possibility of future gain. But a large proportion will not be able to go to sea again without a survey, which is

always a costly matter, and it is probable that when the opportunity of gain returns the owners will not be able to utilise it. But the rate of actual destruction is limited by the capacity of the shipbreaking industry, which, particularly in America, is working at high pressure.

Obsolescence is not, however, merely a question of age or workmanship. New and cheaper methods of propulsion may render the old method out of date. The geared-turbine and the oil ship have come to stay and to challenge the supremacy of the reciprocating engine. Technical difficulties (which are now said to be overcome) have hampered development of the former, but the internal combustion (Diesel) engine has made remarkable progress since the War. The following figures (from Lloyd's *Register of Shipping*) indicate the extent of such progress, as well as that in the use of oil as boiler fuel on ships driven by steam.

PERCENTAGE OF GROSS TONNAGE OF TOTAL MERCHANT VESSELS
IN EXISTENCE

	1914.	1923.
Sail power only	8.06	4.34
Oil, etc., in internal combustion engines	0.45	2.56
Oil fuel for boilers	2.65	24.23
Coal	88.84	68.87
	100	100

At the present time, out of 361 merchant vessels under construction in the world, 86 (representing over one-third of the gross tonnage) are motor vessels.

If all the claims (relating to efficiency, economy of space, and running costs) advanced by advocates of the Diesel engine are substantiated, there appears to be little doubt that we are but at the beginning of a new era in ship propulsion, and that, in spite of the greater initial cost, a rapid advance will be made with cargo steamers as well as those in which the new engine already finds favour. In that case the average life of the ships comprising the present fleet would

probably be reduced far below twenty years. Development of the internal combustion engine on ships is conditioned by an ample supply of widely distributed oil stations along the highways of commerce, and these are already being erected. Many shipowners are probably hesitating between the steamship and the oil engine, and their hesitation is a factor which, for the present, intensifies the depression. When the oil engine is perfected and standardised, as the reciprocating engine was standardised long ago, a large number of the existing—and comparatively new—steamships will be admitted to be obsolete and sent to the ship breaker.¹

The two main factors determining obsolescence—age and the new methods of propulsion—favour a return to prosperity at an earlier date than that suggested by the amount of superfluous tonnage now in existence. The question remains whether our competitive position has been seriously prejudiced by the events of the last few years. Space prevents a detailed examination of the situation abroad, and I must therefore confine myself to an expression of opinion based upon statistical and other evidence. The United States of America was the most formidable competitor during the shipping boom, but there is no reason to suppose that she will continue to be so. Her share in the trade since the depression has been comparatively small, and has consisted largely of ships intended for traffic on the great lakes, which had been neglected during the Atlantic boom. A large proportion of her ships are idle and much of her building machinery is rusting from disuse. The most serious competitor is Germany, whose naval yards are now available for mercantile work. France, Japan, Italy, and other countries have made progress ; but their combined

¹ The existing—more or less experimental—oil ships may become obsolete even more rapidly than the modern steamship. In the case of the former oil will be competing with oil, and the rate of obsolescence will be determined by the degree of inferiority of the older experimental oil engines. In the case of the latter steam will be competing with oil, and the relative prices of coal and oil will be an important factor affecting obsolescence. If the relative price of oil rises the steamship will enjoy a longer life than will be the case if the relative price falls.

efforts have not sufficed to reduce the proportion of the world's trade enjoyed by our own industry during the last few years. The competitive test has not yet been completed. The full costs have not yet been measured against each other ; the qualities of the ships have not yet been fully tested. But there appears to be no evidence that the old-time qualities of British design and workmanship have suffered in comparison with those of our competitors.

One disquieting factor in the situation calls for comment. A writer in *Fairplay* points out that "in pre-War days a more or less correct idea of the cost of building a 7500 ton single-deck steamer could be ascertained by taking the market price of a ton of steel plates as the price per ton dead weight which a builder would require to lay down a steamer, and in those days there was very little variation between the cost of building and the market price of the ready boat." Between 1908 and 1914 the similarity between the two figures was very marked. In January 1924 the value of a ship was £8 per ton dead weight, while the price of steel plates was £10 : 5s. per ton—that is, "speculative" building involved a certain loss. Even under then existing conditions the builder required £9 : 14 : 8 per ton to cover his costs.¹ But wages were abnormally low relatively to those obtainable elsewhere. In other words, in spite of specific advantages in costs which will not continue, the builder could not produce a ship at the market price. The price of steel is advancing and wages are likely to rise. For the moment, therefore, recovery may be delayed in this country through the competitive advantage gained by other countries producing their own steel and paying wages disproportionately low in terms of their own currencies. But these are likely to be temporary difficulties only.

The last factor which calls for comment is the probable effect of disarmament upon the shipbuilding industry. If the pre-War output of warships amounted to, say, 15 per cent of the total, and the producing capacity was increased by, say, 25 per cent during the War, it is obvious that the

¹ German plates were obtainable at about 30s. per ton below the price of British plates.

industry will not be fully restored until the sustained demand for merchant ships is considerably in excess of the pre-War demand. Some berths have already been abandoned and others will probably be closed this year. Moreover, so many skilled workers have left the industry that its producing capacity, on that side, is considerably less than it was four years ago.

Reviewing the evidence which has been submitted, and other evidence which, through lack of space, has been omitted, there is a distinct possibility of a very rapid revival in the shipbuilding trade, but it is no more than a possibility. The present trend of events suggests a return to the pre-War normal position in about two years.¹ At that time, and for some years afterwards, I believe we shall be building at least one-half of the world's annual addition to ocean tonnage, and that (provided the steel situation is not fundamentally changed by recent and future political arrangements) our most formidable competitor in the standard types of cargo steamers and passenger liners will be Germany.

¹ There is now a tendency to substitute cargo liners for the pre-War ocean tramp. The former sail between two fixed points, and the cargoes are unloaded and carried to the ports of destination by coastal steamers. If the new method (which resembles that necessarily employed in railway transport) of utilising main and tributary routes becomes widely extended, its consequences for shipbuilding may be important. There will probably be new designs and larger standard sizes for both ocean and coastal work, while the intermediate ocean tramp size will not be so much in demand. If the claims made regarding economy of transport show promise of fulfilment, the consequent doubt as to the most economical ship in the near future may tend to delay complete recovery.

THE CRISIS IN THE COTTON INDUSTRY

Professor G. W. DANIELS

I¹

A CONSIDERATION of the present position of the British cotton industry must begin with a statement of certain facts concerning its position in 1913. The comparative magnitude of the industry at that time is indicated by its possessing 40 per cent of the world's cotton spindles, as contrasted with 22 per cent possessed by the industry of the United States, the industries of Germany and France following with 8 per cent and 5 per cent respectively. Of the world's power-looms the British industry possessed 29 per cent, that of the United States 25 per cent, and the industries of Germany and France each less than 7 per cent.

As these figures suggest, the activity of the British cotton industry was largely dependent upon its export trade. According to pre-War estimates this trade then absorbed about 80 per cent of the total output of piece-goods and, in addition, about 12 per cent of the total output of yarn. In 1913 the value of the whole of the cotton textiles exported from the United Kingdom reached a total of £125·6 million ; piece-goods accounting for £97·8 million, yarn for £15 million, and manufactures other than piece-goods for £12·8 million. On the other hand, the value of the whole of the imports of cotton textiles into the United Kingdom, in 1913, amounted to £12·25 million, of which nearly two-thirds consisted of goods such as laces, hosiery,

¹ A large portion of the first part of this chapter has been contributed to the *Proceedings of the Manchester Statistical Society* and is reproduced with the permission of the Council of that society.

fabric gloves, trimmings, etc., into whose manufacture fine yarns, previously exported from this country, largely entered.

In view of the above facts the general pre-War position of the British cotton industry is fairly clear. In 1913, when the industry was working at its full capacity, it supplied, so far as the productions on which the industry concentrated are concerned, almost the whole of the home market, but for the absorption of at least three-fourths of its productions it was dependent upon its export markets. Roughly, the extent of the present depression in the industry is indicated by the extent to which the 1913 volume of this export trade has shrunk.

The figures in the table on the following page show the percentage variations in the volumes and values of the total exports of piece-goods and yarn for the years 1913 to 1923.

From these figures it will be seen that when the piece-goods exports in 1922 and 1923 are compared with those in 1913 they show a decline of about 40 per cent. A similar comparison of yarn exports shows a much smaller decline ; indeed in 1922 the 1913 volume was nearly attained. When we bear in mind, however, that yarn exports are but a comparatively small proportion of the total output, it is clear that, in any case, their decline is not an important factor in the present depression. The position in the spinning branch of the British cotton industry is mainly due to the decline of piece-goods exports, and it is upon these exports that we may concentrate our attention.

PIECE-GOODS
Yards, 000,000's omitted. 1913 = 100.

Year	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.
Yards	7,075	81	67	74	70	52	50	66	43	60	59
£	97,775,855	82	66	91	115	142	183	324	141	146	141
Average price per yard in pence	3'22	3'31	3'27	4'05	5'44	8'99	12'18	17'08	10'83	7'95	7'90

YARN
Lbs., 00,000's omitted. 1913 = 100.

Lbs.	2,101	85	90	82	63	48	77	70	69	96	69
£	15,006,291	79	69	89	111	143	226	317	159	176	140
Average price per lb. in pence	17'14	16'09	13'15	18'72	30'11	50'47	50'03	77'71	39'36	31'53	34'77

In order that the situation may be seen at a glance the markets for piece-goods have been divided into eight groups, and in the following table are given the percentage distribution to these groups of markets, and the percentage

quantities taken by them, in the years 1913, 1922, and 1923.

Markets.	Percentage Distribution.			Percentage Quantities.		
	1913.	1922.	1923.	1913.	1922.	1923.
Far East. . . .	60	44	46	100	45	44
Near East	10	9	9.8	100	54	59
Central and South America	9.5	8.6	10.2	100	55	71
Europe	6	11.8	8.0	100	150	82
Self-governing colonies	5.5	9	8	100	99	88
Africa	4.8	6	7.3	100	78	88
United States	0.6	2.2	4.2	100	218	420
Other countries	3.6	9.4	6.5	100	190	109

When the distribution of piece-goods exports in 1922 and 1923 is compared with their distribution in 1913, the most notable changes are the larger proportions taken by Europe, the self-governing colonies, and the United States, and the smaller proportion taken by the Far East. But, as between the two periods total exports decreased by nearly 2800 million yards, the changes merely indicate that, in the Far Eastern market, the shrinkage has been greater, and in the other markets less, than the average shrinkage. A more informative view of the situation is given by the second part of the above table, which shows that, in 1923, the Far East absorbed only 44 per cent, the Near East 59 per cent, and Central and South America 74 per cent, of their 1913 quantities, and these three markets, it should be observed, accounted for 80 per cent of the total exports in 1913. The other markets show much smaller reductions, that of the United States showing a large increase; indeed in 1922 both Europe¹ and the United States absorbed far larger quantities than in 1913, and the self-governing colonies almost the same quantity as in that year. Owing to the comparative size of these markets, however, it is

¹ The increased exports to Europe in 1922 are partly accounted for by the extraordinary quantities of grey cloth taken by Switzerland and Germany, which countries, it was said, had a considerable advantage over this country in lower costs of finishing.

apparent that considerable increases in their percentage takings are necessary to offset small reductions in the percentage takings of the other markets, especially that of the Far East.

On the demand side, therefore, it is clear that the present depression in the British cotton industry is mainly due to the shrinkage of demand for piece-goods in its large export markets, and it is not without significance that these markets are constituted by countries whose economic development is not so advanced as that of Europe, the self-governing colonies, and the United States. In these latter markets, during the last two years, there has been an effective demand for British cotton textiles approximately equal to the pre-War demand, notwithstanding the fact that prices were about 140 per cent higher, while in the former markets there has not been a similar effective demand. No doubt it is yet too soon to say that any markets have permanently attained a position at which the pre-War demand may be expected from them, but it appears that some markets are nearer to it than others.

At the moment the question of supreme importance for the British cotton industry is the prospect of recovery, and on this question but little light can be thrown without some consideration of the causes of the situation. The large general cause is, of course, the dislocation which began with the outbreak of War in 1914. At that time it was apparent that the industry would be seriously affected, as it has been ever since, although, with the rise of prices after 1915, the real situation was obscured by a precarious prosperity which culminated in the post-Armistice boom. In a world economy conditions in any market are linked in some measure to conditions in every other market; consequently, owing to the ramifications of its world trade, recovery in the British cotton industry is peculiarly dependent upon a restoration of something like pre-War economic relationships between all parts of the world.

When the situation in particular markets is examined, the operation of this general cause may be seen in more detail. Especially in those markets which now show the

greatest decline of demand for piece-goods, the post-Armistice boom and its collapse have to be taken into account. The boom itself, in fact, was largely the outcome of an increased demand from these markets, notably from the Far Eastern markets. During the War the Far East had been unable to obtain the pre-War supplies of cotton textiles, and after the Armistice purchasing power in that part of the world was relatively high. India had enjoyed a series of good monsoons, the balance of trade was extremely favourable, and, owing to the state of the exchanges, English goods were comparatively cheap, and were expected to remain so in view of the Currency Commission's recommendation of a rupee stabilised at 2s. gold. In China, again, for similar reasons, the position was favourable to large purchases, and the same was true of the Central and South American markets.

As is now clearly seen, the position was a precarious one, and the collapse ensued as a movement was made towards more normal conditions. With the high rate of exchange Indian merchants committed themselves to an expenditure on piece-goods of about 50 crores of rupees, which, owing to the decline of the sterling value of the rupee, became about 80 crores.¹ At the same time the fall of prices and decreased purchasing power in the United Kingdom, the United States, and Japan—three of India's chief export markets—contributed to bring about an adverse balance of trade. It was in these circumstances that the weak position of Indian merchants who had imported at boom prices was revealed. Consequently there came the resolutions that no fresh business in foreign piece-goods should be undertaken, and that payments for British piece-goods should be postponed until exchange again reached 2s. per rupee. It was at this time, too, that the ground became favourable for the boycott propaganda of Mr. Gandhi and his campaign in support of Indian-made piece-goods, preferably those of domestic production.

The conditions of the China section of the Far Eastern market after the boom were similar to those of the Indian

¹ Coubrough, *Notes on Indian Piece-goods Trade*.

section, and were mainly due to similar causes. The appreciation of silver first stimulated large imports, and, as this stimulus was reduced, the value of stocks declined and trade was restricted, while internally the country became torn by disorder. In the Central and South American markets, again, essentially similar causes began to operate with the collapse of the boom. There the fall of the exchange had serious effects upon the export trade, which were intensified by the reduction of purchasing power and depression in Europe, and complicated by problems of internal readjustment. As regards the position in the Near East, mention is needed only of the fact that war has hardly yet ceased in that part of the world. In view of the conditions that have prevailed in the large markets for piece-goods, the situation in the British cotton industry since 1920 is hardly surprising.

Since 1920, apart from short spurts, all the above markets have remained in a state of depression, and even yet the prospects of a near recovery are not too good. In the Near East the return to normal conditions has been hindered by the unsettled conditions in Central Europe and by the conflicts between Near Eastern countries, while, in addition, there is the problem of the exchanges. Nevertheless, if the recent settlements prove sufficiently effective to allow the peoples of these countries to resume and steadily continue their usual activities, and if quiet is maintained in Egypt, there is ground for hope that, with a growth of confidence on the part of traders, a considerable improvement in the Near Eastern markets may be seen within a comparatively short time. In the countries which constitute the Central and South American markets the conditions already mentioned have not yet been remedied. Both in the Argentine and Brazil, and also in Chile, the chief difficulties are those of the exchanges, which difficulties are accentuated by the state of finance in these countries. Serious efforts are now promised to redeem the situation, and these efforts would undoubtedly be assisted by an improvement in the European market, in which these countries dispose of a large part of their exports. Taking together all the countries comprehended in the Central and South

American market, 1923 has witnessed a large increase in their imports of piece-goods, and, though a position has not yet been attained at which normal steady trade may be expected, the outlook in this market is not unpromising.

The Far Eastern market, which is by far the most important of the export markets for British piece-goods, requires rather closer consideration, especially as regards the Indian section, which in 1913 received over 70 per cent of the British piece-goods sent to the Far East. In 1923 the proportion taken by India was rather larger, but the quantity was only about 47 per cent of the 1913 quantity. While the present depression is common to all sections of the Far Eastern market, in 1923 it was very pronounced in China and Japan, where, in addition to the general causes, particular causes were in operation. In China internal disorder still prevailed, and in Japan the earthquake calamity doubtless had some effect. Again, since 1913, both countries have extended their own production, though not to such an extent as to account in any large measure for the great decline of demand for British piece-goods in the Far East. Since 1913, however, as will be seen from the following table, Japan has improved her comparative position as an exporter of piece-goods to India.

PERCENTAGE IMPORTS OF PIECE-GOODS INTO INDIA

Year . . .	1913-14 (pre-War year).	1919-20.	1920-21.	1921-22.	1922 (nine months).	1923 (nine months).
United Kingdom .	97·1	90·3	85·6	87·6	91·7	89·4
Japan . . .	·3	7·0	11·3	8·3	6·5	8·2
Other countries .	2·6	2·7	3·1	4·1	1·8	2·4
Total percentages .	100	100	100	100	100	100
Total imports in million yards .	3197·1	1080·7	1509·7	1089·8	1155·7	1050·7

From the above figures, while it is evident that the United Kingdom still retains a vastly predominant position as exporter of piece-goods to the Indian market, it would appear that, in the future, increased competition may be expected from Japan. But, before commenting further

on this matter, it is well to glance briefly at the supply of piece-goods for this market produced by the Indian mills. In the year 1913-14 the output of these mills amounted to 1164 million yards, making with the imports a total of 4361 million yards. Of this total 151 million yards were exported, leaving a balance available for consumption in India of 4210 million yards. In the year 1921-22 Indian mill production had increased to 1732 million yards, making with the imports a total of 2821 million yards. Of this total 234 million yards were exported, leaving a balance available for consumption in India of 2587 million yards. Between the date of these figures and the present the position has not appreciably changed. Hence it is clear that, notwithstanding an increase of Indian mill production by nearly 50 per cent, the present consumption of piece-goods in India is far below the pre-War consumption. So great is the difference that, if it were made up by imports, and the British cotton industry supplied its pre-War proportion, a considerable step would have been taken towards restoring to the industry its pre-War activity.

Will the difference be made up by imports, and will the British cotton industry supply its pre-War proportion? As regards the first question it is evident that, if the Indian mills continue to increase their production at the rate just indicated, they will soon reduce the difference. Since 1913, however, Indian mills have been amply protected by prevailing conditions, and, although tariff obstacles have been made greater—and, if the desires of Indian millowners are met, will be made greater still—it seems hardly likely that a similar increase of production will be seen within a short time. Moreover, with a restoration of normal conditions a gradual increase of consumption of piece-goods in India may be expected as in pre-War days.

On the other hand, there is the domestic production of India as a source of supply. According to recent calculations this production, before 1914, was roughly equal in amount to the net production of the Indian mills; and although this position was not maintained in every year between 1914 and 1921, there was a strong tendency in

this direction.¹ Whether, with the influence of Mr. Gandhi behind it, this domestic production is likely to increase it is difficult to say. Recently Indian millowners have been complaining of the spread of the "Khaddar" movement. Up to the present, however, it is improbable that domestic production has greatly increased, and, assuming a restoration of normal conditions, it is hard to believe that it will gain extensively on modern methods of production.

Assuming that, with a restoration of normal conditions, the Indian market for piece-goods may be expected to recover, is the British cotton industry likely to supply its pre-War proportion of imports? A glance at the table given above shows that, apart from Japan, other countries have made little headway in supplying a greater proportion. Moreover, as regards Japan, it must be observed that the figures given in the table are percentages, and that the total imports at the present time are much smaller than in 1913. Consequently the volume of imports from Japan is also much smaller than the percentages would suggest, and it is by no means certain that, if the pre-War volume of India's imports were restored, Japan would retain her present proportion. Further, it must be borne in mind that the goods generally supplied by Japan are of a coarser quality than those from this country, and are thus likely to compete more directly with the productions of the Indian mills, and with "Khaddar," than with imports from the United Kingdom. On the whole it appears that the prospects that the British cotton industry will retain something like its pre-War proportion of the imports of piece-goods into India are not unfavourable.

Whether India will soon demand the pre-War volume of imports depends upon several considerations. It is a promising sign that the year 1922-23 saw the external trade of India slowly returning to normal, though impeded by the state of European markets, and the movement has continued during the months which have elapsed of the year 1923-24. The balance of trade is now definitely in

¹ Coubrough, *Notes on Indian Piece-goods Trade*. Net production = total production, less exports.

India's favour, and the sterling exchange value of the rupee has become fairly stable at a point not far from the pre-War par value of rs. 4d. During the last three years the Indian market for piece-goods has been largely dominated by the boom imports of 1920, the fall of the exchange, and high prices. It was not until 1921-22 that these imports were placed on the market in any quantity, and at the end of 1922 the market was overstocked at current prices, although the prices were considerably lower than had been anticipated. During 1923 the prevailing depression has been shared by the Indian mills, as is witnessed by the strike of Bombay operatives owing to the refusal of the millowners to pay the annual bonus which has been customary during the past few years.

At present there is much political unrest in India, and in this respect the position is unstable. From the economic point of view, however, there seems good reason for the impression that the dislocation of the War period has been nearly overcome, and that recovery in Europe would greatly assist in the completion of the process. Consequently there is ground for hope that, in the near future, the imports of piece-goods will come nearer to the pre-War level, assuming that the prices at which the goods are offered are within the purchasing power of the consumers. During the past three years the monsoons in India have been favourable, but it is a well-known fact that, even with a good monsoon, the amount which the great mass of the population of India can afford to spend on clothing is strictly limited. The vast proportion of this population is engaged in agricultural pursuits, and for his products it is estimated that the Indian native is receiving only about 33 per cent more than in 1914. The index number for Bombay in December 1923 shows cereals at an average price only 25 per cent higher than in July 1914, while cotton manufactures are 129 per cent higher. Until this premium on the pre-War price of cotton goods is brought nearer to the premium on the pre-War purchasing power of the population of India, it seems unlikely that a demand for the pre-War volume of piece-goods will be expressed

by the Indian market. Moreover, it would appear that this statement is applicable to the other greatly depressed markets for piece-goods, seeing that they too are constituted by countries in which large proportions of the populations are engaged in agricultural pursuits. Probably one of the main reasons for the smaller shrinkage of demand in the markets constituted by countries of more advanced economic development is that, in these countries, the purchasing power of the populations has been maintained more nearly in accord with the level of prices than it has in the other countries. In its bearing upon this question the table relating to the United Kingdom given on the following page is important. All the figures are calculated on the basis of 100 for the year 1913.¹

It will be noticed that, during the period which the table covers, the average values of our exports have been considerably in excess of the average values of our imports when both are calculated on the basis of 1913 values. This means, of course, that our exports are relatively dearer than in 1913, and this must have an important bearing upon the export of cotton textiles in view of the large place they occupy in our export trade. But even more important in this respect is the fact that throughout the period the average values of cloth (and of yarn, with the exception of the year 1922) have been much higher than the average values of our exports taken as a whole. Finally, as more than three-fourths of our imports are foodstuffs and raw materials, while a still greater proportion of our exports are manufactured goods, the difference of values which the table shows is further evidence of the relatively decreased purchasing power of a given quantity of agricultural products, in the provision of which great masses of the people who consume British piece-goods are engaged.

In view of this position the inevitable conclusion seems to be that if an effective demand for the pre-War volume of British cotton textiles is to be expressed, either the pur-

¹ The figures, with the exception of those for yarn and cloth, which have been calculated from official returns, are published in the *Board of Trade Journal*, January 24, 1924.

chasing power of their consumers in the large markets will have to increase, or the price at which the goods are supplied

Period.	Total Imports.		Total Exports (U. K. Goods).		Yarn.		Cloth.		Wholesale Market Prices.
	Average Values.	Volume of Trade.	Average Values.	Volume of Trade.	Average Values.	Volume of Exports.	Average Values.	Volume of Exports.	
1920 . . .	285.1	88.4	358.3	70.9	453	70	530	66	308
1921 . . .	190.3	74.3	268.8	49.8	230	69	336	43	198
1922 . . .	152.2	85.8	199.1	68.9	184	95	247	60	159
1923—									
Jan.-Mar. . .	146.2	95.3	195.7	74.4					158
Apr.-June . .	148.3	94.8	188.4	77.6					160
July-Sept. . .	150.8	88.8	192.3	68.7	203	69	245	59	156
Oct.-Dec. . .	151.6	92.8	183.7	77.5					161

will have to decrease, or both movements proceed together. As regards these movements it is important to observe that

while the average value of our exports has been decreasing, the average value of our imports has been increasing. On the other hand, the average value of cloth has scarcely changed, while the average value of yarn has actually increased. Although it may be that the average value of our imports will increase still further, it is hard to believe that this will proceed to such an extent as to remove the premium on cotton textiles. If this premium is to be removed, it seems certain that the operation will have to take place mainly on the supply side.

What are the possibilities of a reduction of this premium, and to what extent is a reduction necessary to restore the pre-War volume of cotton textile exports? As regards the latter question the percentage total amounts paid annually for exported piece-goods since 1918, with 1913 as 100, are extremely significant. These amounts are as follows:

Year . . .	1913	1918	1919	1920	1921	1922	1923
Percentages .	100	142	183	324	141	146	141

Apart from the boom period, revealed in the figures for 1919 and 1920, which, if report speaks true, would have to be considerably reduced if they were replaced by actual receipts, these figures show a remarkable uniformity in the amounts paid for piece-goods over a period of years. So striking is this uniformity that it suggests that, at present, there is something like a stationary annual amount available for the purchase of piece-goods, and, as will be seen, this amount is about 42 per cent in excess of the 1913 amount. In view of the present trend of prices it is not unlikely that this amount will increase, but is it likely that it will increase to much more than 50 per cent above the 1913 amount? This figure can be only an estimate, but perhaps it will not be far wrong for some time in the future. The conclusion suggested by the estimate is that a restoration of the pre-War volume of exports depends upon a reduction of the average prices of piece-goods to, say, 50 to 60 per cent above 1913 prices. Seeing that in no year since 1920 has the total amount paid for piece-goods by the Far Eastern market, the largest market, been much in excess of the

total amount paid in 1913, this level of prices would seem to be rather high for this market. However, with such a reduction it may be that some lack of recovery in the Far Eastern market would be compensated by expansion elsewhere.

II

In order that the present position on the supply side may be understood, it is necessary to have in mind the trend of events between 1914 and the collapse of the post-Armistice boom. When the War broke out the cotton industry passed through a severe crisis, and it was not until towards the end of 1915 that a position of profitable working was attained. As will be seen from the preceding and the following tables, it was at this time that the rise in prices became conspicuous which, notwithstanding the increasing costs of raw cotton and labour, enabled the industry to yield increasing dividends until the collapse of the boom in the spring of 1920. With the collapse the prices of cotton soon began to fall, but wage-rates were only just reaching their highest point, at which they remained until June 1921, thus offering another example of the need for a system of wage determination which will effect changes at appropriate times.

During 1919, moreover, there were two other important events that call for notice. In July an agreement was arrived at whereby the number of working hours in British cotton mills was reduced from $55\frac{1}{2}$ to 48 per week. Whatever the permanent effect of this reduction, it is probable that, for a time, the output capacity of the mills will be lessened, a fact which has to be borne in mind when considering the volume of trade necessary to restore full-time activity. On the other hand, assuming a lessened output, the effect upon costs, if the pre-War rate of return on capital is expected, has to be taken into account.

The second event was the beginning of the movement, which continued for eight or nine months, by which a large number of the spinning concerns in the cotton industry were either recapitalised or refloated. Until 1919 there

had been very few cases of the writing up of capital, and

PERCENTAGE CHANGES IN PRICES OF RAW COTTON *

Year . . .	1914.		1915.		1916.		1917.		1918.		1919.		1920.		1921.		1922.		1923.	
	July.	Dec.	June.	Dec.	June.	Dec.	June.	Dec.	June.	Dec.	June.	Dec.	June.	Dec.	June.	Dec.	June.	Dec.	June.	Dec.
End of Month.																				
American .	100	69	79	119	133	160	202	348	349	333	315	462	406	149	118	176	199	228	250	318
Egyptian .	100	74	87	120	137	230	336	369	339	321	319	635	735	259	182	253	232	209	191	286

AVERAGE RATES OF DIVIDEND OF THE NUMBERS OF SPINNING COMPANIES MENTIONED *

Year	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.
No. of Companies .	100	100	100	90	40	100	150	230	270	287
Rate per cent . .	6.87	5	6	7.5	16.25	21.25	40.21	9.97	4.01	2.27

CHANGES IN WAGE-RATES OF COTTON OPERATIVES †

Year	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.
	July.	June.	June.	Feb.	Dec.	June.	May.	Dec.	Nov.	
Standard lists — 100	105	110	115	125	140	165	215	245	205	No change.

* The figures in the first and second of the above tables are those given in Tattersall's *Cotton Trade Review* for January 1924.

† In the cotton industry changes in wage-rates are always stated as percentage changes on the standard lists. The figure for July 1914 indicates that, at that time, wage-rates were already 5 per cent above the standard lists. Consequently, the rate settled in November 1922 represents an increase of about 86 per cent on the pre-War rate, and correspondingly for the other dates.

even the share markets had failed to respond to the dividends that were being obtained. When the post-Armistice boom

began, it was expected to continue for a considerable time, and a continuance of large dividends was anticipated. These views found support in the ideas that owing to the reduction of hours and the dislocation of the Continental cotton industry, the demand for cotton textiles would be far in excess of the power of supply, and that the British cotton industry would be in the best position to profit by the situation. In addition it was insisted that new mills could only be built and equipped at many times the nominal value of existing mills, and that consequently revaluation was a perfectly reasonable proceeding, especially as it would permit depreciation allowances to be claimed more in accordance with the replacement values of the mills.

Influenced by these considerations the mill-buying boom began, whereby, in the early stages, prices were offered to shareholders two or three times as great as the amount of their paid-up capital, and as the boom proceeded, six or seven times as great, and in many cases even more. The only limit which speculators appeared to have had in mind, in considering the price offered, was whether it was still sufficiently below the replacement value of the mills. It must be borne in mind, however, that, owing to the peculiar method of finance which prevails in a large portion of the cotton industry, the prices paid were not so extravagant as appears at first sight. In very many cases a large proportion of the capital required for carrying on the mills is provided by loan-money, bearing only a comparatively low rate of interest, and of this loan-money the purchasers expected still to have the use. Evidently with this method of finance a high return on share capital may be obtained, although the return on the whole of the capital employed is much lower. Generally, however, the process of buying mills and refloating them was a wasteful one, and in many instances the more economical device of writing up the share capital was adopted. Some indication of the effect of the movements in increasing paid-up share capital is given by a calculation relating to 136 spinning companies, which shows that in 1920 the average amount was

about three times greater than before refloatation or recapitalisation.¹

The decline in the dividends of spinning companies after 1920 is revealed in the table given above ; and the following table is of interest as showing the average dividends of a number of original, recapitalised, and refloated spinning companies in the years 1921, 1922, and 1923.

Year.	Original Companies.		Recapitalised Companies.		Refloated Companies.	
	No. of Co.'s.	Average Dividend on paid-up Share Capital.	No. of Co.'s.	Average Dividend on paid-up Share Capital.	No. of Co.'s.	Average Dividend on paid-up Share Capital.
1921	65	13·1 per cent	33	8·4 per cent	195	2·4 per cent
1922	65	8·95 " "	34	6·64 " "	202	1·3 " "
1923	65	4·48 " "	36	6·12 " "	209	·72 " "

The majority of the concerns included in the above table are situated in the Oldham district, which is the centre of the American section, as distinguished from the Egyptian section of the spinning branch of the cotton industry. The table therefore includes only a proportion of the concerns engaged in spinning, and as the dividends given are average dividends, it must not be assumed that every concern included paid some dividend. In fact, of the 301 companies included in 1922, 178—20 original, 10 recapitalised, and 148 refloated companies—failed to pay any dividend, and many of those that did had to call upon their reserve funds for the purpose. Again, of the 310 companies taken into account in 1923, 219—27 original, 15 recapitalised, and 177 refloated companies—paid no dividend. Moreover, this proportion of non-paying concerns would doubtless have been greater if the total did not include a number of concerns in the Egyptian section

¹ Since writing the above I have received, from a friend engaged in the cotton trade, a similar calculation relating to 156 mills, which were recapitalised or refloated during the boom. This calculation shows that on these mills the old paid-up share capital amounted to £7,755,389 and the new paid-up share capital to £28,016,953.

which, throughout the depression, has been less severely affected than the American section.¹

This distinction between the two sections of the spinning trade is important when considering the organised efforts that have been made to cope with the crisis. The technical difference between them is that the American section, which comprises about two-thirds of the spinning trade, spins low and medium counts, and the Egyptian section, which comprises about one-third, spins fine counts. Largely because of the difference between their productions, the latter section is normally in a stronger position than the former. Whatever comparative advantages the British cotton industry has in the humidity of the Lancashire climate, and in the skill of its workpeople in the constructing and operating of complex machinery, these advantages are most fully experienced in the fine spinning section. Consequently those engaged in this section—including the manufacturers who use fine yarns—are not so exposed to competition as are the spinners and manufacturers who produce and use the coarser yarns. As regards the present situation, however, perhaps the most important factor in determining the comparative position of the two sections is that, in general, the purchasing power of the people who consume the finer goods is still sufficient to enable them to maintain something like their pre-War purchases, whereas this is not the case with great masses of the people who consume the coarser goods. Many of the fine spinners contend that their superior position during the past year has been due to the fact that they acted with more caution than the coarse spinners during the recapitalisation and refloatation movement. While this contention cannot be altogether ignored, perhaps, at the moment, it should not be unduly stressed, seeing that companies that remained outside the movement are also failing to make dividends. At the present juncture the fact that the fine spinners have not been so much troubled with unfavourable prices of

¹ This paragraph and the above table are based on information contained in the excellent Annual Reviews of the Textile Trade published by the *Oldham Chronicle*.

cotton and anxiety about supplies is more important. Whatever weight is attributed to the various factors in the situation, it is undoubtedly true that, although the concerns in the fine section have not always been fully employed, and their selling prices have been rather low in relation to costs, on the whole they have fared much better than the concerns in the other section of the trade. It is this difference which partly accounts for a cleavage of opinion as to the organised efforts which should be made for dealing with the situation.

Such organised efforts are not a new departure in the cotton industry ; indeed, they have been customary for a long time in periods of depression or when a shortage of raw material was threatened. The policy previously adopted has been that of curtailing output by working short time or by stopping a proportion of the machinery. In the main, during the present crisis, it is this policy which has commended itself to the Federation of Master Cotton Spinners' Associations, which includes spinners of both the Egyptian and the American sections of the trade. Thus in October 1920 the Egyptian section started a four days week, and the American section a three days week, which arrangements were continued until July 1921. After that date, although full working time was permissible it was by no means general. Towards the close of the year, therefore, there was a movement to resume organised short time, but a ballot failed to secure the requisite majority in its favour. Consequently organised short time did not begin again until October 1922, and then it was confined to Saturday and Monday stoppages in the American section. Partly because the arrangement was not considered a satisfactory method of dealing with the situation, and partly because of an increased demand in the middle of January 1923, a ballot concerning its continuance was taken, and the arrangement came to an end.

Two months later, as the American section continued in a depressed condition, the Federation made another recommendation that this section should reduce its output by 50 per cent during March, and the recommendation

was repeated for April. Actually this system of short time was continued until November, when assertions were made that it was not being observed by a number of spinners, who desired to spread their overhead costs over a larger production, and so reduce the cost of their yarn. Consequently another ballot was taken, the members of the Federation being urged to continue short time in the American section, partly in order to maintain prices, and partly to conserve the supply of cotton, which, it was feared, would be so depleted before the next crop was harvested as to force up cotton prices. Further, the members were given the option of voting for a 32 hours week or a 24 hours week. In the ballot neither proposal obtained the requisite majority, and so organised short time once more came to an end.

From this brief account it will be seen that the policy of the Federation has been the customary one of recommending the adoption of short-time working. In pursuing this policy, however, the Federation has met with much criticism from a considerable section of its members, who desired more heroic measures. It was the dissatisfaction of this section which, in 1922, brought into existence, outside the Federation, a body known as a Provisional Emergency Cotton Committee. While this Committee was in agreement with the Federation as to the necessity for organised short time, it insisted that short time was ineffective unless it was coupled with some method of preventing spinners from selling at prices insufficient to cover costs. In a word, the policy of the Committee was the establishment of a Control Board somewhat similar to that which existed in the cotton industry between June 1917 and February 1919.¹ This Board, which was com-

¹ The widest known member of the Committee and the most ardent advocate of a Control Board is Sir Charles Macara, whose views may be found in his numerous writings. While Sir Charles Macara is at one with the Committee and its supporters in regarding the formation of a Control Board as a method of coping with the present situation, he goes further and insists upon the necessity of a permanent Board for the cotton industry. Details of the formation and working of the War-time Board are given by H. D. Henderson in his volume, *The Cotton Control Board*.

posed of representatives of employers' organisations, of operatives' trade unions, of merchants, and of the Government, was established at a critical period of the War, when the industry was faced with a shortage of cotton. To meet the situation, the Board adopted the policy of limiting production to the supply of cotton by fixing maximum percentages of machinery which firms could work, such percentages to be exceeded only on the issue of a licence by the Board. When a firm obtained a licence it had to pay a levy, and from the funds thus accruing benefit was disbursed to operatives unemployed as a result of the restrictions imposed by the Board. Between the situation at that time and now it is possible to draw a plausible analogy, though it is to be feared that there is a vital distinction between a situation in which there was an intense demand for cotton goods at rapidly rising prices, and one in which even falling prices have not induced such a demand.

However, it was the formation of such a Board, but without the representatives of the merchant interest, that the Provisional Emergency Committee contemplated. Consequently, in March 1923, the Committee called a mass meeting of spinners, at which resolutions were passed in favour of the formation of a Board to control production and to regulate prices, the operatives being asked to co-operate in the scheme. In addition it was decided that Boards of Directors should be requested to instruct their salesmen not to sell yarn below cost prices, and, to make the decision a practical one, the Committee proceeded to fix an appropriate scale of cost prices. The next step was taken in May, when, after a meeting with representatives of the operatives, a scheme was put forward for the establishment of a Joint Cotton Advisory Board. With the establishment of such a Board, supported by the operatives, the Committee believed that millowners could be compelled to observe the Board's decisions as to output, prices, and payment of levies when they were allowed to work their mills more than a specified number of hours per week. From these levies it was intended that employers and

operatives deleteriously affected by the Board's decisions should be compensated.

To these proposals both the Federation of Master Cotton Spinners' Associations and the Cotton Spinners' and Manufacturers' Association ¹ were vigorously opposed, the Committee being described as a self-appointed and unauthorised body of which no further cognisance would be taken. Meanwhile the Federation itself had been strongly urged to supplement short time by some other method, with the result that a scale of basic prices for standard American counts was formulated, which, on being submitted to a mass meeting of members, was accepted so as to come into operation on June 1. This scale of prices was considerably lower than that put forward by the Committee, but when it came into operation the Committee decided to support it.

Very soon it was seen that this scale of prices was an utter failure, and in July, in view of evidence that few if any sellers were adhering to it, it was abandoned. Its failure at once gave rise to further demands from the Committee for the establishment of an Advisory Council consisting of representatives of employers' and operatives' organisations, with power to control production, fix basic prices, and impose penalties on firms refusing to carry out its instructions. Almost immediately the Federation decided to put the matter to the test of a ballot, with the result that the proposal to set up an Advisory Council was rejected, the votes given in favour representing little more than 25 per cent of the spindles. In September, however, the Federation again decided to resume the practice of issuing basic prices for yarn, and appealed to the members to respond more fully to the requests for returns showing their production, sales, and deliveries. To what extent

¹ This Association is the other great employers' organisation in the cotton industry. Its membership includes over 700 firms, with about 5,000,000 spindles and 500,000 looms, mainly situated in North and North-East Lancashire. The practical distinction between the Federation and this Association is that the former is the organisation of employer spinners and the latter of employer weavers, or manufacturers as they are termed in the trade.

the advice of the Federation has been followed it is difficult to say, but, on the whole, it is improbable that it has had much influence in determining the actual prices at which yarn has been sold.

The next important step was taken early in October, when the ex-Lord Mayor of Manchester convened a meeting of representatives of employers and operatives from all parts of Lancashire to take into consideration the grave condition of the cotton industry. At this meeting the cleavage of opinion already indicated soon became apparent. On the one hand, the Emergency Committee section and the representatives of the operatives looked for a remedy in the formation of a Control Board. On the other hand, the representatives of the Federation and of the Manufacturers' Association showed quite clearly that they were unable to commit their members to a scheme of control. Ultimately, however, they consented "to meet an even number of representatives of the operatives at meetings to be convened by and under the chairmanship of the Lord Mayor of Manchester, with a view to discussing whether any practical steps can be formulated for the betterment of the cotton trade."

From the outset it was apparent that the attention of this Joint Committee would be concentrated mainly on the question of the desirability or otherwise of establishing a scheme of control. At the same time, the extreme difficulty of devising a scheme which would comprehend the whole of the trade was equally apparent. Very soon, indeed, the question was narrowed down by the declarations of the fine spinners and the general body of manufacturers that they wished to be left out. Consequently the deliberations of the Joint Committee had to be devoted to the question of devising a scheme of control for the American cotton-spinning section. Before the end of January 1924 the Committee had proceeded so far as to formulate a scheme for this section which was actually approved and recommended by the Federation of Master Cotton Spinners' Associations.

The scheme was based on the assumption that it would

be acceptable to the operatives' associations and that it would gain the approval, as expressed by ballot, of the owners of 80 per cent of the spindles covered by the Federation and the Manufacturers' Association. Under the scheme provision was made for a Board of Control composed of representatives of employers and operatives in equal numbers. The main functions of the Board were to regulate production by deciding the number of working hours or the percentage of production to be carried on ; to fix basic selling prices for yarn calculated on the average cost of production ; and to make levies on spindles in such manner and of such amount as might be decided. The income from these levies was to be devoted to the support of operatives in the controlled section unemployed owing to the state of trade. For this purpose provision was also made for contributions from employers and workpeople, and, in addition, an application was proposed for a grant of £250,000 from the Cotton Trade War Memorial Fund.¹ Finally, in order that the Board might effectively perform its functions, the Government was to be asked to give legal sanction to the scheme for a limited period of, say, not more than twelve months.²

At the time it seemed somewhat doubtful whether the scheme could be brought into operation, and before long the manufacturers came forward with objections. These objections, it is understood, related to the probable effect of control in raising yarn prices, to the element of compulsion, and to the proposed application for the above-mentioned grant. In face of this opposition it was realised that the scheme could not be carried through, and the Joint Committee concluded its deliberations on 11th February with the expression of opinion that, "owing to the diversity of interests involved in various sections of the industry it is impracticable to devise a scheme for regulating the trade which would meet with the approval of all interests concerned."

¹ This fund is composed of the surplus left by the War-time Control Board.

² An outline of the proposed scheme appeared in the *Manchester Guardian*, January 23, 1924.

Immediately the efforts of the Joint Committee broke down the Federation decided to take another ballot on the question of short-time working in the American section. This time the proposal was for a working week of $26\frac{1}{4}$ hours during the months of March, April, and May, and, in the ballot, votes representing nearly 90 per cent of the spindles were recorded in favour of the proposal. At the end of March it could be stated that only two firms in membership with the Federation had refused to adopt the proposal, and that many outside firms had given their adhesion to it. Since that time the position of the spinners is said to have "considerably improved," and a further recommendation has been issued that the working week of $26\frac{1}{4}$ hours be continued until September 1924. During the period, however, the Short-time Organisation Committee is to watch the progress and effect of the policy, and is empowered to make such amended recommendations regarding the extent of curtailment of production as the state of trade may warrant. In addition, the important announcement has been made that, at a meeting with representatives of all the leading banks in the area of the cotton industry, the bankers expressed their approval of the policy of the Federation, and agreed to do all in their power to ensure its success.

At the moment, therefore, those engaged in the cotton industry are trusting to this policy to tide them over the depression, and the question of a Control Board has fallen into the background. Whether it will remain there depends upon the policy of the Federation being faithfully adhered to by spinners, while waiting for the large expansion of the export trade in piece-goods which is necessary to recovery. As yet there are no signs of such an expansion in the near future. It appears to wait upon a considerable reduction of prices. For this reduction a larger and cheaper supply of cotton is absolutely essential. Until this supply is secured, though some reduction may be effected in other directions, and the industry improve on its present position, complete recovery cannot be expected.

April 1924.

UNEMPLOYMENT IN THE WOOLLEN AND WORSTED INDUSTRY¹

ARNOLD N. SHIMMIN

I. Recent History

ALTHOUGH the percentages of unemployment recorded in the woollen and worsted industry at the end of 1923 are small as compared with those in other industries such as building, engineering, shipbuilding, and dock working, they represent a peculiarly interesting problem. Only so recently as 1916, when the Munition Workers' Act was under discussion, it was proposed that the whole of the woollen and worsted industry should be included for insurance purposes under the Act. Strong representations were made to the Board of Trade against the inclusion of the industry. The main argument in support of this position was that in pre-War days unemployment in the wool textile trade was very low, and this contention is certainly borne out by official statistics.

In the end the argument against inclusion prevailed, and it was not until the omnibus Insurance Act of 1920 that the woollen and worsted industry was included in the Unemployment Insurance Scheme.

The second phase of the problem is reflected in the post-War boom which the trade experienced. The confident prophecies of the War years seemed to be fulfilled, and the amount of unemployment in 1919 and 1920 was small. This state of affairs renewed the hopes of every one in the

¹ A note at the end of this memorandum explains the principal technical terms used.

trade, and the collapse which was to come so quickly seemed absent from the minds of all. "Laissez-faire" was the order of the day.

The origin of the boom in the first two post-War years is not far to seek. The destruction or serious disorganisation of production in the old Continental centres of the trade threw large demands upon the machinery in the Yorkshire trade. Both machinery and raw material were scarce just when the demand was most intense, and transport congestion hampered the adjustment of existing supplies.

A peculiar post-War reaction, attributed by many observers to the civilian clothing restrictions during the War and the monotony of khaki wear, led to a strong demand for the finer classes of material, and the whole of this tendency was sustained by the artificial prosperity induced by inflation. Empty European markets were the talk of the day, and this engendered keen competition for supplies amongst the traders. It was no uncommon thing during this period to find purchasers ordering three or four times the quantity of goods they really required. This meant a scramble for priority coupled with long-dated contracts, and soon led to a state of affairs which could not be sustained.

The abandonment of Government control of raw materials in 1919 was welcomed by the trade as a whole, and the attitude repeatedly reflected in the pronouncements of the leaders of the industry was that the trade was well able to look after itself. Competition was not feared, and reliance upon the superiority of British products and technique was the general basis of confidence. A pronounced resentment against anything in the form of Government interference pervaded the discussion of such schemes as the Ter-Meulen Bond Scheme and the Export Credits proposals.

The collapse of 1920-21 produced a state of affairs which is in sharp contrast to the confidence just described. Unemployment touched unprecedented levels, and by May and June of 1921 nearly 24 per cent of the people in the industry were returned as unemployed. Traders were

bewildered by the cancellation of heavy contracts, and the position was complicated by the widespread collapse of the many "mushroom" firms that had come into existence during the latter part of the War period. Many old-established firms as well suffered a very serious set-back or collapse. Though 1921 was such a black year, 1922 witnessed a remarkable recovery, and there was steady improvement in the unemployment figures. In fact, by the end of the year, in all but the heavy woollen centres the problem had shrunk almost to its pre-War proportions. The year 1923 opened with a very confident tone, and every one seemed satisfied that trade had "turned the corner." Continental centres were active, and apparently found little difficulty in obtaining sterling credits in spite of declining exchanges.

In America there was similar prosperity. Machinery was operating at very nearly its full capacity. Rising prices and a firm retail demand strengthened the general feeling of confidence. Unhappily, the occupation of the Ruhr with the ensuing political tension dealt a severe blow at this favourable position. The Bradford trade in particular suffered heavily, because the Continent has always been one of its most favoured markets for tops and yarns. Chaos in transport abroad held up old orders in the occupied area, and new orders declined in number as the general uncertainty increased.

Just as the Ruhr occupation was beginning to register its effect in the trade, the American market developed an unexpected weakness (about March 1923), and tended to renew the impression that another slump was at hand. The prices of tops and yarns receded, and the resulting position was peculiarly acute, because the prices of the higher-grade raw materials rendered it impossible to work them through to yarns and fabrics for which prices were depressed.

The remaining months of 1923 have witnessed extremely interesting developments, in that the areas producing the fine-grade fabrics have suffered a steady rise in their proportions of unemployment, while the centres producing

lower class goods have experienced considerable improvement in their trade. This evidently means that reductions of wages have so materially reduced purchasing power in the home markets that consumers have been driven off their post-War preference for fine cloths, and have turned to the purchase of cheaper cloths such as are produced in the heavy woollen areas. Inflation and rising prices abroad have strengthened the tendency, with the result that cross-bred wools, which have been heavily undervalued for a couple of years, have come into their own, and have experienced a sharp rise in value. High-grade merino wools have not declined in price in sympathy with the transference of demand to lower grade materials, because a short supply of merino wool has counteracted this natural tendency.

II. The Present Situation

From this brief survey of the recent history of the unemployment problem in the wool textile trade, we may turn to an analysis of the net effects and a view of the problem as it faces us to-day. The first thing that strikes one is the adjustment of the labour supply. A return for the end of 1918 reports 111,073 male operatives and 166,374 female operatives in the trade. The *Labour Gazette* gives the estimated number of persons in the trade for the current insurance year as 119,630 males and 153,700 females. From these figures one may reasonably infer that there has been a steady return of male labour to the industry ; with a corresponding displacement of the female labour imported during the War period.

The second feature of the position is that the War has robbed the wool textile trade of its largest market for semi-manufactured goods. The Report of the Committee on Textile Trades after the War draws attention to the fact that of the imports of woollen yarns and tissues in 1913, 84 per cent of yarns and 71 per cent of piece-goods came from Allied countries (mainly France and Belgium), while Germany was responsible for about 16 per cent of

yarns and 26 per cent of piece-goods. In the export of piece-goods, however, Imperial markets took only 34 per cent of British exports while foreign countries took the remaining 66 per cent. Germany in pre-War days was easily the largest market for semi-manufactured goods, taking in 1913 over 37 per cent of the tops exported and nearly 60 per cent of the yarns. *The loss of this important clearing-house for semi-manufactured goods is really the crux of the whole position when we are considering the problem of unemployment in the woollen and worsted industry.*

The Report of the Committee on Textile Trades also draws attention to the fact that prior to the War the combing and spinning machinery of this country suited to the working of cross-bred wool was more than sufficient to meet the home requirements, and the loss of any foreign market at this stage of manufacture was bound to precipitate a problem of unemployment of peculiar difficulty.

The meeting of this position has defined the third phase of the situation to-day. Having lost the old markets, trade has recovered in part by a process of redirection. Central Europe is still the weak spot, and pre-War levels have not been restored. American and Eastern markets have proved remarkably elastic, and an appreciably increased trade with these areas has eased the position considerably, though the problem has not been solved.

While England is making progress in markets outside Europe, trade reports would seem to point to the fact that Central Europe is meeting an increased proportion of its requirements by its own machinery, and it is here that English trade is most heavily hit. The large population of Europe has not yet recovered sufficiently from the losses and disturbances of the War to represent a normal influence in the demand for wool products.

Any forecasting of the tendency of trade is made peculiarly difficult by the problem of raw material supplies, the depreciation of foreign currencies, and a certain change in dress-goods fashions.

As has been pointed out already, people are feeling poorer and are moving on to cheaper fabrics. Cross-bred

wools, so long out of fashion, are now very much in fashion. The "Bawra" holdings of merino wools have been cleared, so that for its supplies of high-class wool the trade is once more dependent upon its primary markets. Continental and American stocks are low apparently, and it is not surprising to find merino values at 90 and 100 per cent above pre-War level.

The revival in cross-bred wools is to be explained in part by the clearance of heavy "Bawra" stocks. In addition, the flocks of sheep (particularly in South America) which two years of depressed prices had made so unremunerative have been heavily reduced. Other influences making for a rise in price of this class of material are the increasing quantities demanded by Japan, and the development in the hosiery and carpet trades.

Apparently we are at the beginning of a process of levelling up in values which will make for a sounder all-round position in the raw wool markets.

The depreciation of foreign currencies has served to quicken the feeling that the wool textile trade is at a considerable disadvantage in the realm of foreign competition. A gradual increase in the quantities of goods from France has drawn attention to the advantage of the French producer. One section of the trade centred in Bradford felt the position was sufficiently serious to demand some form of action to protect the English manufacturer. The first public expression of feeling on this point was at a meeting of the Bradford Chamber of Commerce on 12th September 1923, when a resolution was passed in favour of an inquiry into the causes of unemployment in the woollen and worsted trade. A sub-committee was appointed to collect and lay before the Board of Trade the requisite evidence and statistics in support of an appeal for such inquiry under Part II. of the Safeguarding of Industries Act. A strict reading of the resolution yields only a demand for an inquiry, but in practice it proved impossible to tie down trade and public discussion to this point. The issue developed into an argument for free trade or protection, and the announcement of the General

III WOOLLEN AND WORSTED INDUSTRY 337

Election on the question of protection intensified the discussion. There would be no point in reviewing the many arguments used in this debate, as so many of them reflected only the conflict of local producers' interests.

But several points emerged which have a direct bearing on the question of framing some policy to deal with the problem of unemployment. The supporters of the claim for protection, for example, at the meeting of the Chamber admitted that there are larger dividends than are justified in some branches of the trade. They also admitted that tariffs are paid by the country imposing them, but argued that "if we must pay let us pay them in wages, not in doles." On the other hand, they pointed to the restriction of output by workers forcing up prices, and urged that depreciated exchanges were the real source of the trouble, as they had given rise to very unequal competition from France and other countries.

Against the proposal to introduce protection, it was argued that a temporary measure is impossible. A tariff means permanent protection. Further, if French goods were to be shut out from the English market, competition with them would only be renewed in our foreign markets. Finally, it was urged that the trade has not yet exhausted its technical resources in competing with French products or for other markets.

This last point is of considerable interest in view of a paragraph in the Balfour Report on "Commercial and Industrial Policy after the War." In the course of a discussion on protective duties, the following statement occurs: "A claim for protection cannot normally be regarded as valid unless the industry which makes it can show either, that in spite of the adoption of the most efficient technical methods and business organisation it cannot maintain itself against foreign competition, or that the attainment of such maximum efficiency is impracticable owing to the feeling of insecurity and the inability to attain a sufficiently large scale of production in face of competition from abroad."

The fear of a shortage of supplies of merino wool in the

future, and the prospect of renewed hardship in the high-class trade on this account, led to a proposal that an export tax be placed on all supplies to countries outside the Empire. The point of this is obviously that the Colonies have practically the monopoly of the finer wools. It emerged in discussion, however, that only about 20 per cent of merino supplies are processed in this country as against 80 per cent on the Continent. Our machinery is not designed to deal with the fine seedy wool dealt with on the Continent. A reply employed to refute the argument for closer Empire trade was that our largest potential markets are not in the Colonies, but in countries like Russia and Germany, where the combined white population is 153 millions as against 17 millions in the Colonies. Once more it was pointed out also that the huge profits of the largest concerns, during the last two or three years, were in themselves a serious barrier to the proposals for protection.

The defeat of the proposals at the General Election has placed the matter in abeyance for the time being, but one point of importance arises, namely, that the operatives were not convinced that protection was a correct reply to the depreciation of the French franc. Numerous arguments have been and are being employed on the question of foreign wages and conversion costs, but reliable information in this connection is exceedingly difficult to obtain. It is also significant that announcements are now occurring that some of the French producers are finding it too costly to replace their stocks with the heavy depreciation of their currency.

Conversion costs remain the storm centre of the trade, however, as the principal difficulty on the manufacturing side is to adjust advancing raw material prices to the depressed prices for finer fabrics.

The influence of a change of fashion in the preference for knitted goods for ladies' wear is a matter on which there is considerable difference of opinion, but there can be no doubt that in the home market knitted goods have in part displaced the products of Bradford looms. If the wearing of these garments is only a fashion, it is not a serious factor

in gauging the ultimate outcome of the problem of unemployment, for a reversion to woven fabrics is more than likely to occur.

Of the immediate action taken to deal with the situation as it stands to-day, two features are prominent, viz. the formation of the Wool Textile Finance Company, and the formation of an association to put a check upon a peculiarly insidious form of fraudulent trading which has developed among unscrupulous traders who take advantage of certain weaknesses in the bankruptcy laws. On the second point, considerable pressure is being brought to bear to secure a revision of the bankruptcy laws with a view to the prevention of fraudulent bankruptcies.

The Wool Textile Finance Company dates only from June 1922, when the trade set about the formation of this mutual credit association to support the old-established firms, who in many instances had become insecure through their losses having drained their capital resources. The central idea of the Company is to provide financial assistance to such firms or companies for the continuation or development of their businesses. The resources of the Company were intended to be about one million pounds, but only £400,000 of this sum has been covered by guarantee. The essential method of working is that the banks should advance the money to the traders, and the Finance Company will guarantee the repayment of the overdraft to the bank in all the approved cases.

The limited success of this scheme brings to light two significant points :

I. At the merchanting end of the trade there is some suspicion of the other sections. The older firms are not always anxious to help the weaker ones, and this position is complicated by the fact that some of those who have been interested in the buying up of other firms are not always anxious to divulge the extent of their interest in other concerns. This factor of sectional suspicions is the key to the difficulty of securing united action in the wool trade, and one may instance the parallel case in connection with the problem of reducing production costs. In this

matter the combers, the spinners, and the dyers do not see eye to eye with the merchant or manufacturer who is hoping to extend his market by reduction of conversion costs in combing, spinning, and dyeing.

2. The banks themselves cannot be expected to view with favour any move which might lead to a trading bank under the direction of the traders themselves.

III. The Future

What are the prospects in the trade? The foremost impression in one's mind is that the change represented by the unemployment problem of to-day is not a permanent one. The facts of the rapid recovery exhibited by the trade in 1922 after the severity of the depression in 1921 are very encouraging. The same resilience has been witnessed again in the latter months of 1923, and the year 1924 opens with considerably brighter hopes than have prevailed for some time past. A really serious feature, of course, is the extent to which labour organisation has suffered, for it is known that the unions have lost heavily in membership, although no figures are available to indicate the precise extent.

It is a truism in these days that any industry would benefit from stabilised conditions abroad, and international peace is undoubtedly the first necessity. But there is considerable scope for inquiry into the conditions of the trade, and there is little doubt that a special committee of employers, workpeople, and independent experts could render to the industry a valuable service by a searching investigation of the actual history and prospects of the trade.

It must be remembered in gauging the position that the wool textile trade is peculiarly the home of economic individualism. It is highly sectionalised, and it is only of late years that it has begun to co-ordinate its sections and proceed to action defined by joint council or discussion. The absence of standardisation and the limited application of joint-stock working mean that the trade is accustomed to a great variety of practice and opinion. It could do nothing

but good to reduce to some common denominator the experiences of the many separate sections of the industry.

The agitation for the protection of the home market has raised three important questions, the answers to which can only be supplied by thorough investigation. They are questions which materially affect the volume of unemployment in the future.

In the first place, if it is proposed to work through to the finished fabric all the semi-manufactured goods now exported, have we sufficient plant and machinery at our disposal?

In the second place, if all goods exported are to be manufactured goods, what are the prospects of maintaining or extending our markets for these goods abroad?

In the third place, if the home market is relied upon, what is the extent of its power to absorb the classes of material at present produced for export? To these three questions satisfactory answers are not forthcoming.

There is room, therefore, for inquiry into the resources of the trade and the character and extent of its business in various directions. Before we can say that the trade is exhausted, it must be shown that the limits of technical development have been reached. There is considerable evidence to show that these limits have not been reached. Only a short time ago one of the leading employers announced that we were considerably behind the Continent in the combing of wool. Another piece of evidence is afforded by an article in the *Yorkshire Observer Trade Review* for 1922. Writing some months before the development of the present agitation under the heading "A Worsted Trade Opportunity," Professor Midgley, of the Bradford Technical College, discussed the technicalities of the structure of competing French cloths, and stressed the fact that "there is striking evidence that top-makers, spinners, and manufacturers have not given sufficient attention to the cloth-finishing qualities of the various wools." Later he pointed out that "Continental manufacturers appreciate very keenly the properties of various types of wool. The most successful cloth manufacturers select from various districts wools

from which yarns may be spun possessing inherent properties for giving maximum results in a particular type of finished fabric." He summed up the position by stating that "we are not likely to get any more of the worsted dress-goods trade than our technical ability warrants."

In the same connection there is room for inquiry into the remarkable decline in the export of worsted tissues. In 1872 these exports totalled 344 million yards. There has been a steady decline, until, in the last pre-War year, the figures stood at only 62 millions. Is this due entirely to the developments in other countries, or does it imply also a decline in our own technique ?

On the commercial side of the problem traders are realising that developing competition abroad must be met by co-operative selling, and a former vice-president of the Bradford Chamber of Commerce has elaborated a scheme to this end. A similar line of action has been suggested as a means of reducing conversion costs, and many business men regard the multiplication of margins, which are the outcome of highly sectionalised production, as a serious drawback to the renewal of trade.

On the question of insurance the operatives' organisations in the trade are practically unanimous in their opinion that insurance by industry is the most appropriate method by which to deal with the problem of unemployment. The employers also, in many instances, incline to the same view. A scheme was drafted for contracting out of the 1920 Insurance Act, but it never came into force.

Wages in the industry are now fixed by agreement for twelve months at a time. This helps manufacturers considerably, and tends towards renewal of confidence and improved employment.

But when all has been said, the industry is still faced with the main problem of securing more closely concerted action to deal with the new condition in foreign markets. If this is secured, a close examination of the facts and a thorough investigation as to the resources of the industry should enable us to predict, not disaster, but a very bright future for the woollen and worsted industry.

TABLE I
TOTALLY UNEMPLOYED

Percentages of Workers unemployed in the Woollen and Worsted Industry at the Principal Centres

End of the Month.	December 1922.	February 1923.	April 1923.	June 1923.	August 1923.	October 1923.	December 1923.	February 1924.	No. of Insured Workers at each Centre.
Bradford . . .	1.4	1.3	1.5	5.4	8.7	10.1	7.9	3.9	63,300
Huddersfield . . .	3.1	3.0	3.4	6.0	10.5	9.8	12.5	10.3	24,100
Halifax . . .	1.2	1.4	2.6	3.9	9.0	7.8	7.1	3.3	11,900
Dewsbury . . .	6.5	4.8	5.4	4.0	4.5	5.7	4.3	2.8	11,600
Batley . . .	15.0	7.8	5.3	4.4	7.5	8.4	8.4	3.3	9,600
Morley . . .	22.2	11.1	4.6	7.4	13.8	9.3	7.5	1.5	7,700
Galashiels . . .	1.4	1.7	2.1	11.8	7.7	12.0	11.7	4.0	3,200
Hawick . . .	5.2	6.3	6.5	11.9	29.8	26.2	22.5	20.0	1,500
Stroud . . .	5.5	5.1	4.3	4.7	4.0	7.2	9.7	11.6	1,700
Wellington . . .	0.5	0	0	0.4	7.8	9.4	19.4	6.7	1,700

TABLE II

UNEMPLOYMENT IN U.K.

INSURANCE RETURNS—WOOLLEN AND WORSTED TRADES, 1921-23

	Number Unemployed.		
	Males.	Females.	Total.
1921.			
Jan.	10,281	14,218	24,499
Feb.	11,977	20,292	32,269
Mar.	13,309	24,907	38,216
Apr.	18,157	30,877	49,034
May	22,035	40,086	62,121
June	22,792	41,295	64,087
July	13,884	26,262	40,146
Aug.	12,139	22,389	34,528
Sept.	13,582	17,037	30,619
Oct.	14,117	19,446	33,557
Nov.	15,990	22,139	38,129
Dec.	15,881	20,115	35,996
1922.			
Jan.	14,649	17,024	31,673
Feb.	13,538	14,468	28,006
Mar.	11,803	11,106	22,909
Apr.	10,341	8,571	18,912
May	9,247	6,226	15,473
June	7,342	4,395	11,737
July	6,332	3,921	10,253
Aug.	6,186	3,737	9,923
Sept.	5,905	2,998	8,903
Oct.	5,685	3,168	8,853
Nov.	6,329	4,012	10,341
Dec.	6,360	4,559	10,919
1923.			
Jan.	7,245	4,550	11,795
Feb.	6,272	3,830	10,102
Mar.	5,918	3,195	9,113
Apr.	5,821	3,810	9,361
May	6,252	4,675	10,927
June	9,727	8,938	18,665
July	10,869	14,667	25,536
Aug.	13,205	17,301	30,506
Sept.	13,663	16,493	30,156
Oct.	13,787	16,356	30,143
Nov.	13,973	16,457	30,430
Dec.	12,151	15,008	27,159

The total number of insured operatives covered by these returns is :

(a) In 1922-23 . . . 268,390

(b) In 1923-24 . . . 273,330

NOTE ON TERMS EMPLOYED IN THIS MEMO.

Merinos are the finest classes of wool. The wool of the merino sheep is the softest and whitest, and can be spun to the highest counts required in the making of first-class fabrics.

Cross-breds range from "low," coarse wool suitable for the making of carpets to "fine," soft, sound wool, ranking next in importance to merino wool in the making of fine coatings and dress goods.

Tops.—The term applied to the continuous band of untwisted wool as it leaves the combing machine.

Yarn.—The spun wool.

Worsteds are fabrics woven from yarns in which the long fibres are markedly parallel (by virtue of the initial "combing"). A typical worsted is a clear surfaced cloth with decidedly smooth handle.

Woollens are woven from yarns spun from "carded" wool in which the fibres are short and criss-cross. The cloth is naturally rougher in surface and handle than a worsted.

The *quality number* is the count number by which wools, tops, noils, and yarns are known. It indicates the count of yarn to which the material will spin. 60's tops are deemed capable of being spun to 60's yarn. The "count" is the number of hanks to the pound (weight), *e.g.* for worsteds the count is the number of hanks of yarn of 560 yards each which will weigh one pound.

Bawra.—This term is composed of the initial letters in the title of the British Australian Wool Realisation Association. This organisation was formed to arrange the disposal of the immense stocks of wool which accumulated during the period of Government control.

March 1924.

PORT FACILITIES

CLEMENT JONES, C.B.

IN any really well conducted discussion of the problems connected with our overseas carrying trade, it is almost certain that sooner or later some one with an air of infinite wisdom and perfect ease of expression will illustrate his argument by employing that popular phrase "the neck of the bottle." The necks of these transport bottles, however, are not always the same. Sometimes the neck takes the form of shortage of tonnage or tugs or lighters; sometimes the neck is found in lack of adequate railway connections, or in insufficiency of trucks; or again, in inadequate facilities at the ports. Moreover, even if unanimity can be reached as regards the particular kind of bottle, it does not follow that the beverage will invariably be the same. The bottle may be labelled "Inferior Port Facilities," and all may be agreed that herein lies the trouble, but the exact cause of the trouble may be found in a variety of factors—wharfage and shed accommodation, mechanical appliances for handling cargo, labour shortage, length of quays, depth of water. There are, as it were, necks within necks.

Those who were charged with the duty of trying to solve transport problems during the Great War will remember how many and various those problems were: Shortage of ships of every kind in which to carry the cargoes; shortage of labour and mechanical appliances with which to handle cargoes; shortage of railway trucks; misuse of transit sheds; misuse of tonnage; congestion here and waste there. So it went on. Committees and Commissions were

appointed who inquired and reported upon these subjects and upon each other, and almost always ended by finding necks of bottles as the result of their inquiries. It is hardly too much to say that the northern coast of France and the southern shores of Britain were strewn with the necks of bottles.

As it was in those days, so it is now. After five years of peace that have included four winters of unemployment there are indications that trade is going to improve, and students of transport problems are naturally wondering what will be the effect of this improvement, if it comes, at the ports. Will the ports be found wanting? It is clear that if our increasing population is to be employed, our foreign as well as domestic trade must increase. One condition of such increase is the capacity of the ports to handle it. The question therefore arises: Are the present facilities provided by British ports compatible with a steady increase of British foreign trade? or, alternatively, must there be a great capital expenditure upon the existing or new ports?

In the chain of transportation at the ports there are three main links: (a) inland transit; (b) the warehouses on the docks; (c) the ships. An interruption in any of these three main services will check the free flow of traffic through the ports. If there should be a breakdown in the system of inland transport, or congestion in the transit sheds alongside the quays, or failure in berthing, loading, or discharging of ships, the whole machinery of feeding our people and carrying on our trade will be dislocated. Moreover, any stoppage in the movement of cargoes will increase the cost of the work.

Numerous instances of the way in which congestion at the ports led to loss of carrying power were seen during the War and during the immediate post-War period.

The subject was dealt with in the Annual Report of the Liverpool Steamship Owners' Association for 1919. In that Report it is stated that in 1913 the weight of our exports was estimated at 97,000,000 tons, of which 77,000,000 tons represented coal exports, and 20,000,000

tons the weight of all other exports, including manufactured articles. During 1919 our coal exports fell to 38,500,000 tons, whilst the volume of our other exports was substantially below that of 1913. The ports of this country have therefore a capacity, proved by the figures for 1913, to deal with at least 70 per cent more traffic than that which passed through them in 1919 ; and yet throughout that year all the principal ports were congested, the time occupied in the turn-round of the ships was nearly double that under pre-War conditions, and vessels were constantly kept waiting for weeks for discharging berths. As the number of ships released from Government service was added to, congestion and delays steadily increased, and thereby the yearly carrying power of the individual ship decreased until its efficiency was reduced below pre-War standards by at least 30 per cent. It became clear that the overseas supplies of this country could not be increased until a free and regular flow of traffic through the ports was re-established.

In looking back over the War period it is of course easy enough to see where mistakes were made in matters of transport. The only purpose in so doing must be to see to what extent our experience in the past can help us in the future. In view, then, of the importance of preventing a recurrence of congestion on such a scale, it may be well to recall the danger-points and indicate the causes that contributed to the blocking of the ports at the close of the Great War.

Firstly, State control over many of the more essential imports, such as wheat, meat, sugar, wool, and timber, caused not only extraordinary fluctuations in the arrival of the imports but also the holding of abnormal stocks in the ports. Government Departments undertook the work of traders, but failed to avail themselves to the full of the channel through which the traders work, and by the use of which the imports are distributed, as they are received, rapidly all over the country for either immediate consumption or storage. A Government Department, for instance, in carrying out a rationing policy could not or would

not place its stocks freely in the hands of the mills, factories, wholesale houses, or retail shops. Its policy was to keep its stocks in its own hands to be peddled out, and as the only places in which there were public warehouses capable of holding large stocks were the ports, the transit sheds and warehouses were left full to overflowing.¹

This abuse was only broken down by making it extremely expensive for either the Government or the private traders to leave their goods on the quays. When the problem had to be faced in this way, it was surprising how quickly goods could be cleared away. But apart from State control there were other factors which made it impossible to pass through the ports of this country more than 58 per cent of the traffic which they handled under pre-War conditions. The principal of these was the shortened hours of labour. If the hours of labour are reduced, the volume of traffic must be diminished, unless either better work is done by using more machinery, or more labour is employed by the introduction of extra shifts.

A further cause that contributed to the congestion at the ports in 1919, and also affected the carrying power of the ships, can be found in the fact that during the War we were forced to draw our supplies from sources more distant from Britain than we had formerly used. Under pre-War conditions we obtained about 20 per cent of our total imports from foreign ports within home trade limits. The greater part of these imports came from Central Europe, and they were, in the main, brought into East Coast ports in vessels of the smaller types. During the War, however, in order to replace these supplies, more distant markets had to be drawn on. For instance, sugar had to be obtained from Java instead of from Austria; wheat had to be obtained from Australia to take the place of that shipped from Baltic ports; and steel from North America to replace German steel. The result was to throw additional work on the vessels of the larger size and on the ports capable of handling such vessels, and largely to throw out of com-

¹ *Annual Report of the Liverpool Steamship Owners' Association for 1919*, p. 3.

mission the smaller ports—mainly East Coast ports, in which were handled a great part of the imports obtained from within home trade limits.

Such, then, were some of the causes which contributed to blocking the ports at the end of the War.

A question which naturally follows is: Are any of those obstructions likely to occur again during the next twenty years? or can we look forward to an increasing trade without a blocking of the pipes through which traffic must flow?

Briefly, the crucial points to be considered may be grouped under the following headings:

- (1) Utilisation of all British Ports.
- (2) The Flow of Traffic through the Transit Sheds.
- (3) Labour.
- (4) Plant.

As regards these considerations it is obviously impossible to say that troubles in some form or another will not arise such as may cause congestion, but it can be said that in each case these problems are being closely examined by the authorities concerned.

Utilisation of all Ports

As has been pointed out, many of our ports have facilities for doing a big trade, and in times past have done a big trade, across the Channel, or the North Sea, or with the Baltic, but are of hardly any use for the ocean overseas trades, because they are not fit to handle the type of ship by which alone such trades can be carried economically. Signs are not wanting, however, that there is a general desire and endeavour in this country to re-establish our trade with Europe. It may be assumed that the increase in British foreign trade, with which we are concerned in this chapter, will be substantially with those European countries with which it was progressing up to the War. Therefore it is reasonable to expect that all the ports formerly used for trade with those countries will be playing their part again.

The Flow of Traffic through the Transit Sheds

The proper use of transit sheds is a matter that is under the constant care of the Dock Authorities. Mr. Warner, the General Manager of the Mersey Dock Board, in a paper on "Port Management," has defined the duties of some of the principal officers on the staff at Liverpool, which shows upon whose shoulders the responsibility rests. The Chief Traffic Manager is responsible for the supervision of all operations performed on the dock quays, including the discharge of vessels, the stowage of goods on the quay and their ultimate delivery. The principal duty of the Chief Traffic Manager is to do all in his power to ensure the free flow of traffic through the transit sheds. These are erected alongside each quay, and play a most important part in the work of the port; they should never be permitted to be utilised for storage purposes, as they form the funnel through which the cargo is poured. If this funnel is blocked no cargo can pass, and the ship arriving from overseas has to wait idle with her cargo on board.

If the flow of traffic through a port is blocked by using its transit facilities for storage purposes, something is destroyed which cannot be replaced.

Sir Norman Hill, who was Chairman of the Port and Transit Executive Committee during the most critical days of the War, when our supply of tonnage was so severely restricted and threatened, has recently written: "The problem of the proper use of port facilities is of increasing importance, because for many years the tendency has been for the consumers to diminish the stocks they hold; in getting its food and clothing the household depends more and more on obtaining delivery as required from retail shops; the retail shops depend more and more on getting delivery as required from the wholesale houses; and the wholesale houses depend more and more on getting delivery as required from the producers. The aim of all is to diminish the lock-up of capital. It is the marked increase in the regularity of transport both at home and overseas

that has enabled the consumers to adopt this policy, and its risks were made patent when the regular flow was interrupted during the War."

For very many commodities there is only one harvest in the year, but consumption is continuous, and therefore storage must be provided somewhere. Obviously this storage can be more cheaply provided in the course of transit to the point where the goods will be consumed than elsewhere. The port must therefore be ready to play its part in providing warehouses for the storing of the cargoes handled until they are needed for consumption. The question which is very difficult to determine is : How great should that part be ? Sir Norman Hill answers the question by saying : " I am inclined to the view that it should only be limited by the consideration that it is the first duty of a port to turn its natural advantages to the best account. It must never allow storage to interfere with the use of its available water frontage for the loading and discharging of as many ships as possible. Subject to this consideration, I should like to see the warehouse accommodation in the ports made as large as is practicable, because there are so many advantages in providing all the storage required on the route of the goods to their ultimate destination, but I recognise that in many ports that is impossible or its cost would be prohibitive."

In order to utilise fully the dock warehouses and the facilities on the land side for feeding and clearing the ports, rapid rail and motor transit are of the greatest importance, coupled with the fact that the sheds on the dock quays must be regarded as transit sheds and not as warehouses. If ports are laid out so that they can be worked in this manner, and the traders made to get accustomed to working in this way, there is no reason why the general facilities provided by our ports should not be sufficient for twenty years, bearing in mind the natural growth of ports, which is always going on to a certain extent.

Labour

The curse of dock labour is the irregularity of the work offering. It is under-employment rather than unemployment from which the dockers suffer. Casual labour is still normal at the docks, despite all the decasualisation schemes mooted for a generation. It remains to be seen whether a Labour Government will take up the question and force decasualisation by introducing maintenance. The dockers now available could handle far more than the existing traffic if only it could be kept flowing steadily through the ports. If the hours of working are shortened, more mechanical appliances will be required to put through the same volume of traffic, unless greater energy is put into the hours that are worked. The two- and three-shift system, each of shorter hours, can be used up to a point to obviate the need for more plant, but the point is soon reached at which the flow of traffic is impeded unless the ultimate receivers are also working on the two- or three-shift system, and in the ports where so much of the transport work must be done in the open there are difficulties in the introduction of extra shifts.

Strikes will obviously tend to congest the ports. Even rumours of strikes are enough to cause disorder—be the strikes in connection with dock labour or transport or coal. For example, at the time of writing (January 1924) announcements have been made in the press that “Conditions in the Welsh steam coal trade have become firmer and foreign buyers are booking considerable supplies for delivery over the next two or three months in anticipation of a miners’ strike. Congestion at the ports has resulted from the stoppage of the third shift working.” It must be remembered, however, that there have been many strikes causing much congestion in the past, but the stoppage has been temporary, and in our main consideration as to whether the ports can handle an increasing trade in the future it is open to doubt whether strikes would be as limiting a factor as permanent bad management or lack of proper modern plant.

Plant

Any one who has had occasion to visit the big ports during recent years hardly can have failed to notice not only the new extensions of existing docks, but also the increase in mechanical appliances for handling all kinds of general cargo. There has been the resumption of work kept in abeyance during the War, such as may be seen at the Royal Albert Dock Extension in London, or at the Gladstone Dock in Liverpool. There are also schemes afoot for new dock extensions at Avonmouth, and for additional works of considerable magnitude at Tilbury. As regards mechanical appliances particular attention has been paid to special cargoes, such as grain and frozen meat—suction grain elevators for the former, and for the latter belt-conveyers, by means of which the frozen meat is carried from the ship's hold into cold-storage warehouses.

The impression that remains after such visits is that the Port Authorities in this country are keenly alive to the vital importance of keeping their plant up to date. Those who have not the advantage of seeing the docks themselves may read about them, as far as the Port of London is concerned, in a chapter by Lord Devonport in Brassey's *Annual* for 1924. Therein he writes: "No effort has been spared to bring this great Port of London, on which the prosperity of Britain, and indeed that of the Empire, so largely depends, to such a state of efficiency as to fulfil not only present-day requirements, but also to provide for the future expansion of trade, which may be confidently looked forward to."

Having now reviewed the various causes of congestion in the past and the danger points which must ever exist in the proper flow of traffic at the docks, we return to our original question as to whether the present facilities provided by British ports are compatible with a steady increase of British foreign trade.

At the time of writing, a Special Committee of the Chamber of Shipping of the United Kingdom is engaged upon an inquiry into the capacity of our ports. The

labour involved in its investigations has been considerable, including, as it has done, many visits of inspection, and its report, which should prove of great value to students of this question, is unfortunately not yet available. In the meantime, however, it has been possible to consult various acknowledged authorities in the world of ships and docks, and their views may be summarised in the following final sentences.

Looking at the position as a whole it would appear that the present facilities provided by existing British ports, including labour, wharfs, etc., will be capable of dealing with a steady increase in British foreign trade during the next twenty years, provided that :

- (1) The port plant, using that term in its most comprehensive sense, is kept well up to date.
- (2) Mechanical appliances are used up to their full capacity.
- (3) There is capable administration not only in the ports but also throughout the whole of the transport services, namely, ships, road, canal, and coastwise.
- (4) The commercial and manufacturing interests realise that storage facilities provided whilst the goods are in transit must be paid for in loss of carrying power, and that they must do all that lies in their power to minimise such loss by regulating the flow of this traffic or providing their own storage facilities.

Briefly, in contemplating the possibility of an increase in British foreign trade it would seem that the limiting factor—the neck of the bottle—will not be found in our port facilities.



PART IV
STATISTICAL INQUIRIES



THE FUTURE POPULATION OF GREAT BRITAIN

A. L. BOWLEY

Now that the age distribution of the population in 1921 is known,¹ it is possible to make a reasonable forecast of the number of men and women who will need employment (at home or after emigration) in 1931 and in 1941.

Let us concentrate attention first on the males who were or will be born between 1876 and 1926, the survivors among whom will be between the ages 15 and 65 in 1941. They fall into three groups: those born prior to 1901, which include the bulk of those who were lost in the War, those born between 1901 and 1914 who were too young to fight, and those born after 1914. The War losses in the first group will prove to have reduced the employable population of ages 30 to 55 in 1931 and 40 to 65 in 1941. The second group benefited by reduced infant mortality, but the total number of births in Great Britain actually fell from 1903 to 1914, and the survivors who have to come into work between 1915 and 1931, and will be between 25 and 40 years in 1941, cannot show any sensational increase over the numbers in the same age groups in 1911, unless emigration is unusually low. It is this group, however, that is providing the great number of lads under 23 now unemployed. The third group will not begin to press for

¹ The *Age Volume for Scotland* was published in February 1924. The corresponding figures for England and Wales have been communicated by the Registrar-General. There was no Census of Ireland in 1921, so that the whole analysis relates to Great Britain taken as a unit.

employment till 1929, and will constitute the age groups 15 to 26 in 1941. The number of births during 1921 was abnormally low ; in 1920 there was an increase, so that in that year the previous maximum of 1903 was just passed ; the number in 1921 was below those of 1914 and earlier years, and in 1922 and 1923 there were further serious reductions. The number of boys from 18 to 26 years in 1941 is certain to be relatively small, and unless the birth-rate increases immediately and rapidly the number from 14 to 18 will also be deficient.

The problem of finding employment for the population in the not remote future is then eased by the fallen birth-rate and by the War losses. On the other hand, net emigration was small during the War years.

In the following tables the population is estimated on two bases. One is the result of applying the death-rates of 1910 to 1912 to the population of 1921, year by year of age. Though the death-rate may fall further, there is very unlikely to be any important change in the low rates already existing for working ages.

The results are shown under the letter B in the tables, and in these it is assumed that there is no emigration after 1921. The other method, of which the results are shown under A, assumes the same percentage decrease in each quinquennial group during ten years as was experienced in the decade 1901-11. Thus in 1901 the number aged 20 to 25 was 1,725,000 ; by 1911 this was reduced by death and emigration to 1,546,000, who were recorded as between 30 and 35 years in 1911, a loss of 10 per cent ; this percentage is applied to the age group 20 to 25 in 1911 to obtain the estimate for those 30 to 35 in 1921. Figures for 1931 are estimated from the known distribution in 1921, while those for 1941 are based on the A estimate for 1931.

The results for the total of working ages, taken as from 15 to 65, are as follows. Detail for each quinquennial group is shown in the tables.

GREAT BRITAIN

Male populations, ages 15 to 65. '000s.

	Recorded in Census.	Expected on Method A.	Expected on Method B.
1901	11,254	...	...
1911	12,537	...	...
1921	13,307	13,651	...
1931	...	13,960	14,704
1941	...	13,898	15,170

The deficit of 344,000 in 1921 is the balance of War losses and checked emigration. If there were no emigration between 1921 and 1931, 140,000 more per annum would be found in these age groups. Emigration on the same relative scale as between 1901 and 1911 would bring the annual number down to 65,000. Between 1901 and 1911 the annual increase remaining in the country was 128,000.

In fact there has been emigration on a large scale since Census day 1921. In the two years July 1921 to June 1923, the net passenger movement from Great Britain to non-European countries shows approximately 100,000 male British subjects over 12 years old.¹ It is certain then that the method B shows too high a number. If emigration continues at this rate of 50,000 males annually, there will have been between 1921 and 1931 an addition of 900,000 males of working ages. If the school age were raised to 16, the addition would be less than 200,000, *i.e.* 20,000 per annum. The raising of the school age would, of course, only affect the supply once and for all.

From 1931 to 1941 there is no problem of finding employment for increasing numbers. On method A there is actually a loss of working population. On method B the increase is only 470,000 in ten years, which even a low rate of emigration would turn into a decrease.

¹ This is a minimum from the various categories enumerated in the official returns.

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So far then as males are concerned, a raising of the school age and a quite moderate amount of emigration would reduce the increase of the population of working ages to an insignificant result.

The corresponding analysis for females leads to the following summary :

GREAT BRITAIN

Female population, ages 15 to 55. '000s.

	Recorded in Census.		Expected on Method A.		Expected on Method B.*	
	Ages.		Ages.		Ages.	
	15-25.	25-55.	15-25.	25-55.	15-25.	25-55.
1901	3735	7175	...	...	...	...
1911	3802	8399	...	...	...	...
1921	3943	9274	4004	9233	...	...
1931	...	...	3963	9704	3958	10,100
1941	...	...	3570	9871	3506	10,538

* Method B certainly underestimates slightly the numbers under 25, since the diminished infant mortality since 1911 is not taken into account by it.

The numbers in the various age groups expected in 1921 on the experience of 1901 to 1911 were very closely realised. The fall in the number of births after 1903 already has a considerable effect in the number expected between the ages 15 to 25 in 1931, and the great diminution in births since 1914 is very marked in 1941.

At least 80,000 more female British subjects left Great Britain for countries outside Europe than arrived therefrom in the two years following the 1921 Census, but it cannot be ascertained how many of these would have been occupied.

To test the increase in the number needing paid occupation, the only method seems to be to use the 1911 Census to find the proportion occupied in each age group. No doubt there have been and will be changes in the proportions.

The results are shown in the table on following page.

On this hypothesis at most there are only 37,000

Ages.	Percentage occupied in 1911.	Estimated Number to be occupied.				
		1921.	1931.		1941.	
			A.	B.	A.	B.
15-25	65	2590	2590	2590	2340	2310
25-55	28	2550	2600	2780	2710	2890
55 and over	17	550	680	690	750	810
		5690	5870	6060	5800	6010

additions annually between 1921 and 1931, and from this emigrants are to be deducted, while there is an actual diminution between 1931 and 1941. If in fact larger percentages ought to be applied, they are applicable throughout, and the general result is not greatly changed.

To summarise : at most there will be 180,000 additional applicants for work (male and female) annually from 1921 to 1931, unless the age of retirement is raised, or the relative number of women occupied is increased, and this is at present being reduced to about 120,000 by emigration. From 1931 to 1941 the most to be expected is 47,000, which will also be reduced by emigration. So far from there being an excessive working population, the annual rate of growth after 1931 will be only 0.2 per cent. The growth after 1941 depends on the birth-rate after 1926, as to which no judgment can be formed.

The rather alarmist figures given by Mr. Keynes in Section VI. of the Reconstruction Numbers of the *Manchester Guardian* are thus not supported. His statement that the number of males in Great Britain in 1921 between the ages of 20 and 69 exceeded the number in 1911 by 1,300,000 was due to misunderstanding of Dr. Brownlee's tables in the same Number. The War deaths have to be subtracted, and then the number is under 800,000. Further, Mr. Keynes states that for many years to come " upwards of 250,000 new labourers will enter the labour market annually in excess of those going out of it." Details are not given, but apparently this comes from subtracting total deaths from total births. It appears from the table here given that the number of males over ten years will (if

there were no emigration) be 1,350,000 greater in 1931 than in 1921, and of females 1,187,000, so that there will be an excess of 2,540,000 persons. Of these 1,070,000 only will be males of working age, 504,000 females between the ages 10 to 55, of whom somewhat over 140,000 may seek work, and 966,000 men over 65 and women over 55. There will, in fact, be a rapidly increasing proportion of men and women past working age to effective workers in the coming decades, as the tables show. Even if "labourers" include women, Mr. Keynes's figures ought to be reduced by 100,000¹ annually, from now till 1931, and reduced to insignificant numbers in the following decade. Dr. Brownlee's figures, which were compiled before the age-distribution in 1921 was known, would, if the War losses were subtracted, give substantially the same results as are here stated. They refer, however, to England and Wales only.

POPULATION OF GREAT BRITAIN
Females. '000s.

Ages.	1901.	1911.	1921.		1931.		1941.	
	Actual.	Actual.	Expected.	Actual.	Expected.		Expected.	
			A.		A.	B.	A.	B.
0	2,126	2,183	..	1,874	..	..	..	..
5	1,991	2,106	..	1,989	..	1,900	..	..
10	1,902	1,995	2,049	2,066	1,759	1,729	..	..
15	1,864	1,911	2,020	2,014	1,909	1,943	..	1,820
20	1,871	1,891	1,984	1,929	2,054	2,015	1,749	1,686
25	1,694	1,827	1,873	1,824	1,973	1,953	1,871	1,884
30	1,438	1,686	1,704	1,703	1,739	1,861	1,852	1,944
35	1,256	1,519	1,638	1,646	1,635	1,744	1,769	1,866
40	1,080	1,301	1,525	1,541	1,540	1,609	1,573	1,758
45	921	1,125	1,360	1,392	1,474	1,531	1,464	1,623
50	786	941	1,133	1,168	1,343	1,402	1,342	1,463
55	632	757	924	953	1,144	1,221	1,212	1,344
60	550	613	734	766	911	971	1,048	1,165
65	397	499	598	604	752	728	903	934
70	289	365	407	425	640	511	605	648
75	173	208	261	264	316	321	394	387
80	90	101	128	129	149	156	224	188
85 and over	36	47	56	58	70	74	83	90
0-15	6,019	6,284	..	5,929	..	..	..	..
15-25	3,735	3,802	4,004	3,943	3,963	3,958	3,570	3,506
25-55	7,175	8,399	9,233	9,274	9,704	10,100	9,871	10,538
55-70	1,579	1,869	2,256	2,323	2,807	2,920	3,163	3,443
70-	588	721	852	876	1,175	1,062	1,306	1,313
Total . .	19,096	21,075	..	22,345	..	..	..	..

¹ The numbers first given yield 130,000 reduction; but when allowance is made for the inclusion of the non-working group aged 10-15, which will be reduced in 1931, we get 100,000.

POPULATION OF GREAT BRITAIN

Males. '000s.

Ages.	1901.	1911.	1921.		1931.		1941.	
	Actual.	Actual.	Expected.	Actual.	Expected.		Expected.	
0	2,123	2,204	A.		A.	B.	A.	B.
5	1,988	2,105	..	1,920	..	..	..	..
10	1,909	1,995	..	2,007	..	1,910	..	..
15	1,857	1,888	2,071	2,084	1,805	1,758	..	..
20	1,725	1,705	1,999	1,967	1,906	1,959	1,760	1,810
			1,781	1,651	1,861	2,027	1,612	1,710
25	1,536	1,640	1,667	1,512	1,737	1,898	1,683	1,891
30	1,332	1,546	1,528	1,436	1,480	1,583	1,668	1,944
35	1,173	1,419	1,515	1,423	1,397	1,433	1,604	1,799
40	1,021	1,208	1,402	1,369	1,302	1,341	1,342	1,478
45	861	1,041	1,259	1,304	1,263	1,299	1,240	1,308
50	720	866	1,024	1,090	1,161	1,211	1,105	1,186
55	563	687	830	878	1,040	1,099	1,008	1,095
60	466	537	646	677	813	854	866	949
65	319	412	503	506	643	615	761	771
70	221	269	310	315	391	405	469	510
75	128	143	185	178	227	233	288	285
80	59	63	77	76	90	98	111	126
85 and over	21	25	28	28	34	35	43	45
0-15	6,020	6,304	..	6,011	..	..	..	..
15-25	3,582	3,593	3,780	3,618	3,767	3,986	3,372	3,520
25-65	7,672	8,944	9,871	9,689	10,193	10,718	10,516	11,650
15-65	11,254	12,537	13,651	13,307	13,960	14,704	13,888	15,170
65-70	319	412	503	506	643	615	761	771
70 and over	429	500	600	597	742	771	911	966
Total . .	18,022	19,753	..	20,421	..	..	..	..

Note.—In 1901 an estimate is included of the excess number of soldiers and others absent in the South African War. This was about 120,000 in excess of numbers abroad on service in either 1911 or 1921. Such persons are by an unfortunate custom excluded from the Census figures as usually quoted. Any reduction since 1921 will add to the number for 1931 and 1941 given above.

REGULARISATION OF THE DEMAND FOR LABOUR BY ADVANCEMENT OR RETARD- ATION OF PUBLIC WORKS

A. L. BOWLEY and F. D. STUART

So far as the cyclical ebb and flow of employment is due to changes in the estimation of profits and other causes operating in the minds of *entrepreneurs*, and even when it is due to a variation in the supply of materials and of food, it is possible *a priori* that public bodies not working for measurable profit, and employing large numbers of workmen, should so regulate their demands as to counteract partly or completely the variations of private demand. In times of depression there is fixed capital as well as labour unemployed, and among the multitude of unsatisfied needs are many for works of a permanent nature such as are undertaken by public or statutory bodies.

We have to consider (A) whether such a policy would defeat itself by causing as much unemployment as it cured, (B) whether transference in time could be on such a scale as to make a serious improvement, (C) how funds could be provided, and (D) what practical difficulties there may be in carrying out the proposal.

A. On the first question we have the possibility that the payments for public works are drawn immediately or ultimately from taxpayers and ratepayers, and if these are mulcted for such expenditure they have less to spend on private employment. This involves the assumption that at any time there is a fixed amount of money available for wages, the old wage fund fallacy, and it is held by Professor

Pigou (p. 129) that this consideration "does not seem to have general weight." The proposal is not to increase the sum publicly spent, but only to advance or retard its expenditure by periods ranging from one to five years. Such an operation does not appear to be beyond the power of financial finesse, unless the sums involved are too large or unless the policy necessarily breaks down in detail of administration. That is, we may ignore difficulty A if B, C, and D are not insuperable.

B. Consider the movement of the unemployment figures which before the War were considered normal. In the twenty years 1894-1913 the Trade Union percentages of unemployed were approximately :

1894 . . . 6.9	1904 . . . 6.2
1895 . . . 5.8	1905 . . . 5.2
1896 . . . 3.4	1906 . . . 3.8
1897 . . . 3.5	1907 . . . 3.8
1898 . . . 2.9	1908 . . . 7.9
1899 . . . 2.2	1909 . . . 7.7
1900 . . . 2.7	1910 . . . 4.7
1901 . . . 3.5	1911 . . . 3.0
1902 . . . 4.2	1912 . . . 3.2
1903 . . . 4.9	1913 . . . 3.1

The average for the first ten years is 4.0, for the second ten 4.86.

When we allow on the one hand for the industries in which employment is markedly casual (dock labour, etc.) not included, and for the under-representation of house building, and on the other hand for the exclusion of industries of steady employment (railways, etc.) and the over-representation of shipbuilding, we may conclude that the average is nearly representative of all trades together, but is, on the whole, a little too low. For purposes of argument we may take 5.0 as the general average of unemployment before the War.

The wage bill in 1911 was computed to be about £800 million. A typical cycle may then be thus represented, the first year being one of maximum employment :

	TEN SUCCESSIVE YEARS									
Unemployed (per cent) .	2½	3½	4½	5½	6½	7½	6½	5½	4½	3½
Relation to average (per cent)	-2½	-1½	-½	+½	+1½	+2½	+1½	+½	-½	-1½
Variation of wage bill (million sterling)	+20	+12	+4	-4	-12	-20	-12	-4	+4	+12

In public expenditure we may perhaps take wages to be 80 per cent of the whole cost. On these figures the wave of unemployment would be levelled to a uniform 5 per cent if a total of £36 million wages (£45 million expenditure) were held over during the first three years and expended in the next three, the average period of postponement being four years; and if a total of £16 million wages (£20 million expenditure) advanced in the seventh and eighth years; the average period of advancement being two and a half years.

If these sums were in fact transferred, it is probable that unemployment would not then reach 5 per cent in the best years, the labour set free from public work being absorbed in private employment, so that the total of unemployment in the cycle would be reduced.

At present the employable population is about 8 per cent more than in 1911, and weekly wage rates about 70 per cent more. The expenditure to be postponed in the first three years would now be £81 million, and that advanced in the seventh and eighth year £37 million.

Sums comparable with these must therefore be transferred if the ebb and flow of employment is to be seriously reduced. Of the very large amounts spent by the Central and Local Governments and other public bodies the great bulk is for providing continuous services by permanent employees, and these cannot be transferred in time. Practically the only expenditure to be considered is that on buildings, roads, and other works of the nature of capital. A careful examination has been made of expenditure of this nature in 1890, 1895, 1900, and each year from 1903 to 1915, and the results are summarised in the annexed table :

SUMMARY OF YEARLY TOTALS EXPENDED BY PRINCIPAL AUTHORITIES
(in thousands of pounds sterling).

	1890.	1895.	1900.	1903.	1904.	1905.	1906.	1907.	1908.
Local Authorities :									
Remunerative	2,600	4,008	11,678	16,260	13,879	14,859	10,894	10,333	8,674
Unremunerative	4,345	8,157	12,092	19,829	16,091	16,528	14,245	12,726	10,355
Total, Local Authorities	6,945	12,165	23,770	36,089	30,570	31,387	25,139	23,059	19,029
Public works and buildings	959	1,152	1,278	1,374	1,605	1,563	1,597	1,701	1,753
Total of 1, 2, and 3	7,904	13,317	25,048	37,463	32,175	32,950	26,736	24,760	20,782
Road Board . . . . .	..	..	..	..	..	..	..	..	..
Port of London Authority . . . . .	..	..	..	..	..	..	..	..	..
Development Commissioners . . . . .	..	..	..	..	..	..	..	..	..
Railway Companies . . . . .	..	..	21,582	16,797	20,527	13,459	13,338	6,590	15,980
Post-office telegraph and tele- phones . . . . .	..	..	454	407	530	624	657	776	751
Total, all items	7,904	13,317	47,084	54,667	53,232	47,033	40,731	32,126	37,513

	1909.	1910.	1911.	1912.	1913.	1914.	1915.	Total.	Average.
Local Authorities :									
Remunerative	7,712	6,682	6,657	5,918	5,943	6,720	6,930	140,107	8,757
Unremunerative	10,260	11,065	10,677	10,391	11,514	13,468	13,963	196,296	12,268
Total, Local Authorities	17,972	17,747	17,334	16,309	17,457	20,188	20,883	336,403	21,025
Public works and buildings	1,903	2,113	2,097	2,098	2,356	2,165	2,385	28,099	1,756
Total of 1, 2, and 3	19,875	19,860	19,431	18,407	19,813	22,353	23,268	364,502	22,781
Road Board . . . . .	..	..	114	296	583	1,271	1,810	4,074	815
Port of London Authority . . . . .	..	21	81	50	197	746	789	1,884	314
Development Commissioners . . . . .	..	..	..	433	982	..	622	2,037	670
Railway Companies	3,557	3,666	4,545	10,566	4,854	..	..	135,401	11,288
Post-office telegraph and tele- phones	707	996	1,125	1,056	2,054	2,100	2,182	14,419	1,030
Total, all items	24,139	24,543	25,296	30,808	28,483	26,470	28,671	522,377	36,907

Detail for the average of the ten years 1904-13 is given in the following table :

EXPENDITURE DEFRAIDED OUT OF LOANS
BY LOCAL AUTHORITIESAverage of the years 1904-13.
£000's.1. *Remunerative.*

Electric lighting, not public	2,017
Gasworks	512
Harbours, docks, piers, canals, and quays	1,314
Markets	80
Tramways and light railways	2,684
Waterworks	2,584
	<hr/>
	9,191

2. *Unremunerative.*

Education	2,735
Highways, bridges, and ferries	2,558
Private street works and improvements	320
Hospitals	277
Libraries	29
Public lighting	9
Lunatic Asylums	567
Parks, commons, etc.	351
Police stations, etc.	80
Poor Law Workhouses, etc.	695
Sewerage	2,210
Others	1,948
Allotments, etc.	384
Working-class housing	283
	<hr/>
	12,446

EXPENDITURE BY CENTRAL AUTHORITIES
AND PUBLIC BODIES

3. Public works and buildings	1,879
4. Road Board	99
5. Port of London Authority	35
6. Development Commissioners	142
7. Railway companies, net additions to paid-up capital	9,708
8. Post-office telegraph and telephone extension	927
	<hr/>
Total 1 to 8	34,427

It is evident that a very considerable part of this expenditure is of the kind that is not necessarily allocated to any particular year. It may be considered urgent, but yet it is in fact frequently postponed. Extensions of buildings, of roads and of railways, new waterworks and sewerage schemes, are commonly considered and debated

for a long time before they are carried out. A relatively small part is actually necessary to accommodate growing populations year by year. The amount *a priori* transferable in time was commensurate with the amount required. To these sums are now to be added a considerable part of the yield of the Motor Vehicle Duties, estimated for 1923-1924 at £13 million. The former sums will presumably be increased in proportion to the increase in wages in the long run.

It is also evident that there has been a great variation in the amount expended year by year, in fact nearly half that required by the proposal, but at the wrong dates. If the policy under discussion had been initiated in 1906, when unemployment fell below 5 per cent, expenditure would have been cut down in 1906 and 1907, advanced in 1908 and 1909, and reduced in 1910 to 1913. It was in fact above the average in 1906 and 1907 and below in 1909.

	Expenditure (Million sterling).		Unemployment.		Expenditure required by Policy.
	Actual.	Relation to Average.	Per cent.	Relation to 5.0 Average.	
	Million £.				Million £.
1906	40.7	+ 10.5	3.8	- 1.2	22
1907	32.1	+ 1.9	3.8	- 1.2	22
1908	37.5	+ 7.3	7.9	+ 2.9	63
1909	24.1	- 6.1	7.7	+ 2.7	61
1910	24.5	- 5.7	4.7	- .3	31
1911	25.3	- 4.9	3.0	- 2.0	14
1912	30.8	+ .6	3.2	- 1.8	16
1913	26.5	- 3.7	3.1	- 1.9	15
	Average 30.2				Average 30.5

If the policy had been fully carried out on the basis that £30.5 million per annum was the average expenditure, £29 million would have been postponed from 1906-7 to 1908-9, and £38 million advanced from 1911-13 to 1909-10. So great an alteration would have required a good deal of forethought, and it would have been difficult to accelerate work as rapidly as required in 1908, but so sudden an increase in unemployment is unusual. So far as these

numbers are valid and applicable, the policy is not out of the question.

In fact the War forced a postponement of expenditure on work of this kind, and a considerable part of the arrears is being made good during the present years of unemployment, and also as much as can be foreseen and financed is being undertaken in advance. To whatever extent this has been done without hindering other expenditure, unemployment has been reduced. The opinion among those authorities whom we have consulted appears to be that presently, when the work now in hand is completed, there will be no more to be done. If in 1926 unemployment (measured by the Trade Union percentage) is under 5, then will be the time to develop plans and prepare funds for further extension of public works when unemployment is next more serious. The problem in respect of the next wave of unemployment is thus relatively simple.

Two points, however, should be noticed. The scheme from its original statement ¹ has always been to offer work in the open market at whatever place it needs to be carried out, and not to label it in any way as for the unemployed (or the unemployable), or specially to make work in a locality where extension is not needed because there are many unemployed on the spot. Secondly, public works employ mainly general or unskilled labour and make demands on the constructive trades ; they cannot relieve unemployment among other skilled artisans and in the textile and many other trades, except indirectly by increasing the purchasing power of the working classes. No such scheme is a panacea for unemployment. For this reason the sums that could be usefully transferred are less than those calculated above after they have been increased in proportion to the growth of wages.

¹ Poor Law Commission 1908, Q. 88,192 : " Evidence of Mr. A. L. Bowley. The unemployed as a class would not be attracted, for the demand would come through ordinary trade sources, and before there was any considerable dearth of employment. The wages paid would be measured only by the work done, being contracted out on the ordinary commercial basis."—Quoted in the Minority Report, Part II., chapter v. p. 1196.

C. The difficulty of providing the necessary funds out of rates in the year in which the expenditure is wanted is insuperable, and a great part of the money raised by rates or taxes in such years would be diverted from providing employment in a normal way. So far as Local Authorities' expenditure is concerned, the money must be raised by loan. The time of borrowing in the open market would normally be one when new capital had insufficient outlet and the rate of interest was low. Further, the Government might be prepared to lend at a low rate of interest, and even to allow the interest to be added to the capital for two or three years. An alteration of the law to allow sums to be accumulated in advance out of rates would lead to great difficulties; but it is conceivable that payments by the Central to the Local Governments might be held up in good years or advanced in bad (the latter being the easier method), so as to force an increase of rates in good years and allow a remission in bad.

Railway Companies and statutory bodies such as the Port of London would need no assistance. It is to their interest to aim at timing their extensions to take place when capital and labour are plentiful. The Road Board has great power in the same direction; plans of development (apart from repair and maintenance) can undoubtedly be carried out at any suitable time.

The main governor of the policy must, however, be the Central Government. It may be suggested that it could find the necessary money without affecting taxation by accelerating or delaying redemption of the National Debt. Suppose that there is a permanent programme of redeeming debt to the extent of £77½ million per annum. Then if in ten years the loans to Local Authorities were £225 million,¹ they might be arranged in relation to the cycle of unemployment as in the following table. £100 million would be allotted to debt redemption and loans each year, but the distribution between the two would vary. The loans

¹ The total amount raised by loans by the Local Authorities in the United Kingdom in the ten years 1902-3 to 1911-12 was nearly £300 million.

would have been expended in such a way as to increase the public works possessed by the authorities and provide in part for interest to the Central Government.

Year of Cycle.	Per cent unemployed.	Excess over $2\frac{1}{2}$.	Loan Expenditure required.	Redemption of Debt.
			Million £.	Million £.
1	$2\frac{1}{2}$	0	0	100
2	$3\frac{1}{2}$	1	9	91
3	$4\frac{1}{2}$	2	18	82
4	$5\frac{1}{2}$	3	27	73
5	$6\frac{1}{2}$	4	36	64
6	$7\frac{1}{2}$	5	45	55
7	$6\frac{1}{2}$	4	36	64
8	$5\frac{1}{2}$	3	27	73
9	$4\frac{1}{2}$	2	18	82
10	$3\frac{1}{2}$	1	9	91
			225	775

The provision of the funds required without serious disturbance of the capital or labour markets does not seem to be beyond the powers of finance. Any effective scheme, however, would require courageous and persistent handling, and would need to be removed from the sphere of party politics.

D. It appears to be generally held, however, by the authorities whom we have consulted that the policy would break down in detail. The reasons given may be summarised as follows. In the experience of the last few years it has not been found that the Public Works Department, the Post Office, the Army or Navy, or other Departments have been able to find work that could be undertaken in advance without injury, and it is held that work is only done when it is urgently needed. In this connection it is to be remembered that the first stage of the policy would be postponement. The spokesmen of local authorities hold that all but a very limited part of their capital expenditure is of a kind that cannot be foreseen and cannot be postponed when the need for it arises. Town extension needs the making of roads, building of schools and extension of all municipal services at the same time, and when these are

in hand they cannot be discontinued because unemployment is low. Further, a considerable permanent staff is engaged for whom regular work is needed. Large-scale undertakings, such as a new reservoir or a new sewerage scheme, or a new bridge, are rare, and they are already postponed up to the limit of safety in order to avoid the increasing of rates. In the aggregate, such works employ a very limited number of men. The view really is that there is little work that is transferable in time ; but in fact urgency is a relative term, and we have seen that the total capital sums borrowed by Local Authorities have averaged before the War nearly £30 million annually.

Great emphasis is laid on the practical difficulties of carrying out any consistent policy under the conditions in which Borough Councils find themselves. If their policy does not please the ratepayers they are turned out at the next election, and their successors reverse it. Long period programmes which have been proposed have been abortive. In the course of our investigations we found one Local Authority which had endeavoured to budget for capital works to be undertaken over a five-year period. After preparing the list of works they found that in practice it was impossible to regulate the order in which the various works were to be carried out, and the scheme had to be abandoned. During the period under review many of the works which at the time were considered necessary were not carried out, and numerous other works which had not been foreseen had to be undertaken. The Councils are necessarily influenced by temporary clamours for retrenchment at one time, for developmental schemes at another, by a labour contingent demanding that work should be provided, and by tradesmen urging a reduction of rates ; which force shall prevail is the accident of election. It is nearly impossible for them to increase rates in times of distress, and even if it were legal it would be impracticable for them to collect and reserve money for future expenditure. Further, the system of working by committees makes a general financial policy very difficult ; there is no central body in the Council that can direct or control the programmes

of the various committees. "Corporation committees will not in practice sanction any dictation beyond a very small point even from the Council itself." Another competent authority told us that "The Finance Committee are the people who have to determine how much will be required from the Overseers every year. This committee should be invested with sufficient power to enable them to control the expenditure of other committees. This is a most difficult thing to do." An attempt to carry out the system "put the Finance Committee in a very invidious position."

These difficulties are very serious. Local Authorities have seldom of themselves the power or the will to undertake a compensating policy in employment. In fact, however, under strong pressure and pecuniary inducements from the Government and from the evident need of trying to increase employment, they have during the recent years of stress carried out considerable works of varying degrees of urgency which they would otherwise have postponed or not undertaken at all.

We may conclude that the only possible way of influencing the amount of employment provided by Local Authorities, without whose co-operation the policy of regularisation can only be partly successful, is by exercise by the Central Government of its powers of compulsion, of making or withholding grants, of granting or refusing power to borrow, and above all, of providing capital on easy terms at times when it is desirable on national grounds that public works should be set in hand.

An essential condition of success is that plans should be prepared, so as to be ready for execution at short notice, in times of good trade. There is always a risk that schemes intended to relieve unemployment may only become effective when the need is past.

We reach the conclusions that it is possible to provide funds for regularisation of the labour market, if a strong policy is framed and carried out, without otherwise disturbing the demand for labour, that the practical difficulties of administering a scheme are serious but not insuperable,

and that the transference of expenditure from one year to another could be on such a scale as to make an important reduction in the cyclical oscillation of unemployment ; but its effect would be principally on men's unskilled labour, and under the best possible administration would leave a considerable part of the problem unsolved.

THE EFFECT ON EMPLOYMENT OF ADJUSTING RATES OF WAGES

IN ACCORDANCE WITH (a) THE LEVEL OF PRICES
(b) THE STATE OF TRADE

A. L. BOWLEY

(A) ADJUSTMENT BY AN INDEX-NUMBER OF THE COST OF LIVING

WHEN retail prices are moving rapidly, say by more than two or three per cent per month, wages tend to lag behind (both in a rise or in a fall) if left to the processes of intermittent bargaining. If the movement is due to a general change in the volume of currency, the wage-earner loses or gains as a result of circumstances unconnected with his work or the condition of his industry. The assessment of wages automatically in terms of a stable currency by means of a valid index-number would remove one variable factor, and make it possible to limit the considerations under which occasional wage-adjustments are made to those relating to the condition of trade.

The process, however, has disadvantages. There are serious theoretical and practical difficulties in compiling a satisfactory index-number, and different numbers are proper for classes with different standards of expenditure. The numbers are specially untrustworthy at times of rapid movement, precisely when they are most necessary. From the mere process of compilation they are always two or three weeks in arrear and the consequent wage changes take a further period, so that changes are always made too late: for example, the seasonal reduction of prices in

the summer affects wages in the autumn. It has been found difficult to translate the price changes into wages by a sensitive and indisputable formula. For such reasons as these the method appears not to give changes corresponding with a housekeeper's experience, it is felt to be artificial, and is distrusted by large classes of persons affected. It does not always lead to industrial peace. In fact the field of its application has been curtailed in recent months. In the woollen and building trades its action has been suspended at least once, and in railways it functions very little, since the bulk of wages are at their agreed minimum.

When prices are changing slowly and irregularly as during the last twelve months, the disadvantages of the method may be held to outweigh its advantages, since by accidentally passing assigned points in a scale the index-number leads to irritating and unnecessary changes.

To consider the effect on employment of regulation of wages by prices, it is necessary to take a working hypothesis. Let us suppose that at a certain time wages are at such a level that all employable persons are employed, and so that an increase would diminish employment. If then by any currency-mongering the general value of sterling is increased or diminished, equilibrium will be preserved if all prices and wages move together in a certain proportion. Prices react quickly, and any machinery which makes wages react equally preserves equilibrium, preventing wages being too high for general employment if prices are falling, and preventing the wage-earner being adversely affected if prices are rising.

If, on the other hand, wholesale prices of materials and manufactures rise owing to a boom in trade, there is no certainty that retail prices of food will rise at the same time or at the same rate, and a change based on a cost of living index-number would have no necessary relation to the ability of employers to raise wages. Again, in the period of falling prices after the boom, a cost of living index might keep wages up (as in the winter 1920-21) when industry required a fall. The conclusion appears to be

that when money is on a sound basis, regulation of wages by a cost of living index-number is more likely to cause unemployment than to prevent it.

In any case, it is evident that any permanent standardisation of real wages, so as to preserve the standard of living reached at any particular date, will cause unemployment whenever the conditions of industry are worse than at that date. It can only give a certain approximation to changes desirable during big price movements, the changes being now and again modified by some other process. It should be added that the relative standards reached in different occupations are not permanent.

(B) ADJUSTMENT IN ACCORDANCE WITH THE STATE OF TRADE

It is now generally recognised that real wages cannot be determined by the pre-War standard, but that they must depend on the output of industry. It has accordingly been suggested that their movements should be related to that output by some formula. It is argued that at every period the national output has a certain value, and that if wages were regulated by some index-number which measured this value, then wage-earners would always have the same proportion of the national income.

The objections to such a method are very strong. In the first place, in a country where manufacture in its advanced stages is prevalent, there are no units of output which combined with prices will lead to a measurement. The only available current measurements are for pig-iron, steel, and coal, and a few other commodities in an early stage of manufacture. A complete monthly census of production would be needed in which monthly profits were shown, which is obviously impossible, and any such modified form as was practicable would be out of date before it could be tabulated. Returns of railway traffic, for example, are commonly three months in arrears. Wages would begin to rise when they ought to fall, and *vice versa*. Secondly, the product at any particular date is not the

amount that passes into consumption at that date. A ploughman in October cannot be paid by a calculation of the value of the wheat sold one to two years later. It does not appear to be possible to define the amounts available for consumption in any given month; stocks are always variable. Thirdly, it is the function of the *entrepreneur* to take risks, and wages being paid in advance of sales will be a smaller or greater proportion of the yield according as the *entrepreneur* is fortunate or the reverse. Over short periods there is no reason why wages should be expected to amount to a constant proportion of output. Finally, a method by which the building operative's wages varied in response to the fortunes of the steel industry is not one which would be accepted.

Some of the objections are not present when wages are based (by a "sliding-scale") on the prices of the product realised in one industry. In fact, however, they ought to be related not to the whole price of the product, but to the margin between the prices of the raw materials and the product. One objectionable result of the existing scale is that wages, being determined by the prices of a previous quarter, continue to rise after the prices have begun to fall. The objection that the scale has no bottom can be met by applying the scale only to wages above a certain minimum. If, however, wages in each industry are to be related to profits in that industry, a less crude form of profit-sharing is desirable.

We have, however, only to consider the effect on employment. Supposing an adequate index possible, would employment be beneficially affected if wages rose in times of prosperity and fell when trade was slack? The answer appears to be that when trade is improving wages should not rise till the unemployed are absorbed; when that is accomplished, wages can rise without affecting employment, and if they rose quickly the undue inflation of output which commonly occurs at such times might be checked, and the following depression (with its concomitant unemployment) be less severe. In a period of diminishing trade the answer is less clear. If wages have risen con-

siderably owing to an urgent demand for labour, no doubt their retention at a high level would increase the depression. But in depression it is generally the case that some markets are over-supplied, and however the prices are reduced it does not appear possible to dispose of the stock and a large current supply. Further, manufacturers are unwilling to risk production on a falling market. The answer depends on the circumstances of each industry. The argument, however, that a reduction of wages lessens the purchasing power of the consumer and therefore increases unemployment is only partly valid. The individual workman does not consume his own product, nor does the wage-earning class as a whole consume as much as half the national product. In the case of goods for export this is evident, and it is equally clear in production of capital goods and of luxuries purchased by the richer classes. In other cases, increased money in the hands of the wage-earners could only increase purchases by them, and would not be sufficient to meet the increased cost to all classes.

It appears to be certain that the flow and ebb of employment cannot be prevented by any adjustment of wages, and probable that no artificial regulation of wages can make any substantial improvement. But a much greater elasticity of wages than at present exists, adapted to the circumstances of each industry, and a much greater mobility of labour from place to place and industry to industry, would no doubt diminish the oscillations of employment.

The above arguments refer to the usual oscillations of industry. It is of course possible that labour as a whole should demand higher real wages than those at which all can be employed ; and in such a case a reduction would in due course diminish unemployment.

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